The RUBBER AGE

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LATE NEWS of the Industry

Mail Order Houses Cut Tire Prices Up to 15% in Midwinter Catalogues

PRICES for automobile tires quoted in the midwinter "flyer" catalogues of Sears, Roebuck & Company and Montgomery Ward & Company, just mailed to consumers, are the lowest in the histories of these mail-order houses and show reductions as high as 15 per cent from the fall and winter catalogue prices. The new quotations reflect in an even fuller measure than previously the declines in commodity prices during the past year, which through the mail order houses' extensive buying facilities have made possible corresponding declines in prices of finished goods.

In the Sears, Roebuck & Company catalogue, Allstate tires of the 29 x 4.40 size, which were quoted at $5.65 in the fall and winter catalogue for 1930-31, are now $4.98, a decrease of almost 12 per cent. For the first time Sears is offering tires in pairs at a reduction from the individual price. If the size mentioned is bought in pairs, the tires will cost $9.60 for the two, or $4.80 each, a price cut of slightly over 15 per cent under the fall schedule.

Montgomery Ward is offering its four-ply Riverside tire in the 29 x 4.40 size for $4.95 against $5.65 in the 1930 fall and winter catalogue and $5.79 in last year's midwinter flyer. If two tires are bought, this size costs $4.79 each or $9.58 for the pair.

Several million copies of each catalogue have been mailed to the consuming public by these mail order houses. Sears, Roebuck has announced that through its new low prices it is making a drive to obtain 1,000,000 new customers.

Standard Oil Companies to Sell Tires Through Their 90,000 Retail Outlets

WORKING through a national system surpassing in number of outlets any retail store chain in the country, five Standard Oil companies will soon be prepared to merchandise automobile tires under their own brand name from coast to coast. With the assistance of the distributors of these companies, the total number of outlets may run between 90,000 and 100,000 or even higher, if wholesaled to independent dealers, garages and stores.

The Standard Oil Company of Ohio is about to begin the sale of tires at its service stations, thus following the lead of the Standard Oil Company of New Jersey and the Standard Oil Company of Indiana. The advent of the Ohio company into tire sales is believed to form the third link in the chain that will extend from coast to coast. The Standard Oil Company of California and the Standard Oil Company of Kentucky are expected to follow later.

The tires to be marketed will be the Atlas brand, controlled by the Atlas Supply Company, which will be owned by the five oil companies as a holding firm for the trademarks, molds, etc., necessary for branded tires. The manufacturing of the products will be done by the United States Rubber Company and the B. F. Goodrich Company, who are operating under a contract calling for 50 per cent of the Atlas requirements from each.

Besides a guarantee, the companies probably will stress the service immediately given and the national service available. The fact that a tire can be purchased on the Atlantic seaboard from the New Jersey company, or from one of the middle western companies, and be adjusted and serviced on the Pacific coast or vice versa will be one of the strongest sales arguments of the chain.

Tires sold by the five companies will be guaranteed for 12 months for passenger cars and six months for commercial cars against break-downs through accidents, blowouts, cuts, bruises, rim cuts, under inflation, wheels out of alignment or other road hazards. In the event of a breakdown, tires will be repaired free or will be replaced by new tires for which the price will be one-twelfth or one-sixth of the usual price multiplied by the number of months the damaged tire was in service.

Standard Oil of New Jersey and its various subsidiaries will undoubtedly offer the widest distributing facilities, since the company covers states along the Atlantic and Gulf coast from Maine to Texas, with the exception of Florida, Georgia, Alabama and Mississippi. In New England it distributes through the Colonial Beacon Oil Company, in Louisiana, Arkansas and Tennessee through Standard Oil of Louisiana, in Texas through Humble Oil and in Pennsylvania through Standard of Pennsylvania. The other four companies in the group are estimated to have more than 14,000 owned and controlled stations and more than 41,000 dealers.

Fisk Rubber Company in Receivership; Plans Made to Continue the Business

EQUITY receivers were appointed for the Fisk Rubber Company, Chicago Falls, Mass., on January 3 on the petitions of the Central Hanover Bank & Trust Company and the Chase National Bank, both of New York City. Judge James A. Lowell in federal court at Boston consolidated the actions and named Roland W. Boyden, Boston attorney, and Charles A. Dana, of Bernardsville, N. J., to act as equity receivers for both petitioners for the "immediate present."

The receivers plan no interruption in the regular conduct of the company's business, and the receivership does not extend to the property, assets and business of the Fisk Tire Company, the Federal Rubber Company or the Fisk Tire Export Company. The latter companies, according to official announcement following the court ruling, are expected to continue sales and service as heretofore.

Counsel for the petitioners stated that ancillary receivers would be asked for the company in Rhode Island, Connecticut, New York and Wisconsin. Each of the receivers has filed a bond of $25,000.

The receivership follows ineffectual attempts on the part of heads of Fisk Rubber to effect reorganization and to arrange for the meeting of notes amounting to $8,199,500, which became due on January 1. The Central Hanover Bank & Trust Company is acting as trustee under an indenture for noteholders, and the Chase National Bank is acting as trustee under the company's first mortgage bonds.

Last month it was announced by H. T. Dunn, president of the company, that it would be impracticable to pay the principal and interest on these 5½ per cent gold notes, and committees of noteholders, bondholders and stockholders were formed in an effort to devise a plan of reorganization. Mr. Dunn estimated at the time that the company would have a net loss, after all charges, of about $6,700,000 for 1930.

A protective committee has also been formed of holders of Fisk Tire Fabric Company first mortgage ten-year 6½ per cent sinking fund gold bonds, consisting of Willard B. Luther, Robert Amory and S. St. John Morgan. Funds for the payment of interest, sinking fund and other charges on these bonds are derived principally from a lease of the mortgaged property to the Fisk Rubber Company.

General Tire & Rubber Company Had Earnings of $732,597 During 1930

DURING the year ended November 30, 1930, the General Tire & Rubber Company showed a profit of $732,597 after interest, depreciation and a write-down of inventories to the extent of approximately $1,000,000, but before federal taxes. This compares with earnings for the previous year before federal taxes of $1,970,000. After federal taxes, the net profit for the year ended November 30, 1929, was $1,536,758, equal after preferred dividends to $15.98 a share on 83,599 common shares.

Sales, in tire units, showed an increase in 1930 over 1929, but sales volume, in dollars and cents, showed a decrease of approximately 11½ per cent in 1930 from 1929, due to the lower prices of tires during the year. The sales total for 1930 was $24,072,000 as compared with $27,200,000 in 1929.

An extra dividend of $1 on the common stock of the company was declared and was paid January 1 to stock of record December 20. At the same time, W. O'Neil, president, announced that the directors had set aside a sum equal to that required to pay this extra dividend, which sum is to be used during 1931 in the interest of the company's employes, in providing steady employment through the financing of out-of-season sales. The payment of the extra dividend in addition to the $4 per share in regular dividends paid during the year brought the disbursements to common stockholders up to $5 for 1930, as compared with the distribution of $6 per share in 1929. The usual $6 a share on the preferred stock was paid during the year.

Lee Rubber & Tire Corporation Shows Loss of $799,111 During Fiscal Year

REPORT of the Lee Rubber & Tire Corporation for the year ended October 31, 1930, shows an operating loss of $193,915 after expenses, depreciation and interest, but before inventory adjustments. After charging off $605,196 for adjustment of inventories of raw materials, manufactured goods and goods in process, the net loss was $799,111. This compares with net profit in the preceding year of $485,930, equivalent to $1.61 a share on 300,000 shares of no-par stock.

To meet the competitive conditions during the year, Lee adopted a plan of budgeting of the company's affairs so as to remain in the strongest financial position possible. The result has been that at the close of the fiscal year the company had reduced its current liability as compared with the previous year by over $700,000. The bank debt was reduced by $550,000. The ratio of current assets to current liabilities was better than 3½ to 1 at October 31.

In his report to stockholders, John J. Watson, president, says, "The great falling off during the year in the number of new automobiles sold resulted in a decrease in the demand for tires for original equipment business, and this caused a large overproduction of tires. The industry reports of unit sales of tires for renewal purposes show a falling off of 18.7 per cent. Our unit sales showed a decrease of 15.8 per cent.

"With the great decrease in the demand for tires there came the most severe competition in the sale of tires of any period in the industry. Some companies, because of financial conditions, having been forced to move their inventories, quoted prices far below the cost of replacement, and it became necessary for our company in some instances to meet this competition and to make sales which yielded no profits."

The consolidated balance sheet of the company shows total assets as of October 31 of $12,115,560, comparing with $13,609,860 a year previous. The profit and loss surplus was reduced to $1,116,272 as compared with $1,920,801 a year ago.

The consolidated income account of Lee and its subsidiaries for the year ended October 31, 1930, compares as follows with the two previous years:

	1930	1929	1928
Net sales	$8,654,847	$10,586,785	$11,032,914
Exp., depr., tax., etc.	8,857,172	10,060,774	10,845,805
Operating loss	$202,325	*$526,011	*$187,109
Other income	115,581	75,537	111,249
Loss	$86,744	†$601,548	†$298,358
Interest	107,171	115,618	132,594
Loss	$193,915	*$485,930	*$165,764
Loss on adj. of invest.	605,196	.....	.....
Net loss	$799,111	*$485,930	*$165,764

*Profit. †Income.

(Other news of the industry will be found on pages 363-369)

Glancing Back Over 1930—A Bad Year in Retrospect

Analysis of the Past Year Reveals Only Trials and Grief to Both the Plantation and Manufacturing Branches of the Industry—Outstanding Events Reviewed

THERE can be no regrets at the passing of 1930 among those associated in any way with the rubber industry. Its quiet demise followed a long period of illness and suffering reaching back into the latter months of 1929, causing grief and anguish to all concerned. It was one of those cases where everyone looked upon the end with a sign of relief and retained only a sad memory.

In spite of many vigorous attempts on the part of governmental agencies and industry in general to stimulate business and bring about a revival of trade, the economic depression continued throughout the entire year. It was a year of frustrated hopes for all the major industries and the rubber industry, burdened with overproduction of both raw materials and finished products, suffered along with the rest.

Crude rubber sank to the lowest price levels in the history of the industry. Opening on January 2 at 15 7/8 cents it climbed to 16½ cents in the third week of February, but dropped gradually to 7½ cents in the first days of October, ending the year on December 31 at 8 5/8 cents. The year's trading was characterized by a generally listless and dull buying interest, the volume of trading on the New York Rubber Exchange being especially low, only approximately 70,000 lots changing hands, representing less than 240,000 long tons. A new form of trading contract was adopted by the Exchange in April, differing in several respects from the "A" contract in force since the organization of the market in 1926. The new contract called for delivery of one standard grade of ribbed smoked sheet in amounts of 10 tons instead of 2½. Later in the year another new contract form was adapted, to be inaugurated beginning with 1931, which will eventually replace the old "A" contract.

Crude Rubber Stocks Reach Record

World stocks of crude rubber reached record high levels during the year and consequently helped to depress the markets both here and abroad. By December, 1931, visible stocks throughout the world had risen to the enormous total of approximately 500,000 tons. Toward the end of the year production was beginning to show a decline, brought about largely by the unfavorable market levels, but for the year the total production from all producing centers of the world is estimated to reach approximately 825,000 tons while it is expected that the total world consumption will fall below 675,000 tons. The drop in the United States consumption was particularly marked and for the full year will probably total only 380,000 long tons as against 470,000 tons in 1929.

It was but natural under the circumstances that the plantation industry should suffer considerably from the situation. Retrenchments and other economies, reduction in output and in several cases a total suspension of tapping have marked this important side of the rubber industry.

The year is credited with being the worst ever experienced by the plantation industry and reports indicate that the crop proceeds will not be sufficient to meet dividend demands except in special instances where favorable forward contracts had been negotiated.

With the fall in the crude rubber market, together with a corresponding severe drop in cotton prices, it has been necessary for the rubber goods manufacturing industry to write off heavy losses in inventories of raw materials. A certain mark-down is also necessitated in inventories of finished goods.

Outstanding Events of the Year

The outstanding events of the year in the domestic manufacturing industry were the absorption of the Miller Rubber Company by the B. F. Goodrich Company in January; the purchase by the United States Rubber Company of the control of the Samson Tire and Rubber Company; the default of the interest on the bonded indebtedness of both Ajax Rubber Company and the Fisk Rubber Company; the bankruptcies of the Murray Rubber Company and the closing down of Mason Tire & Rubber Company; the concentration of tire and mechanical goods manufactured by the United States Rubber Company at Detroit and Passaic, respectively;; the suspension of activities of the Michelin Tire Company in Milltown, N. J.; the announcements by Firestone and Goodyear of the erection of factories in South America; and the adoption of the plan by the Standard Oil interests to retail tires at their chain of service stations.

In the tire industry the principal factors in contributing to the general distress of the year were the low automobile production, calling for a decline in original equipment business, and the complete collapse in replacement demands. Total tire sales for original equipment, replacements and export during 1930 will probably not exceed 54,000,000 casings as against 74,000,000 during 1929. Of these only 14,000,000 casings were used as original equipment as against 22,000,000 casings in 1929. Only approximately 2,500,000 tires were sold for export, while replacement sales are estimated at 38,000,000 casings as compared with 46,500,000 casings in 1929. Failure of the replacement market to materialize was perhaps the greatest surprise and disappointment of the year to the manufacturers and to the trade.

The taking over of Miller by Goodrich served to further the apparent policy of the latter company in acquiring

smaller and weaker units to round out their production in drug sundries and miscellaneous rubber goods, as in the case of Miller and footwear as was the case in their acquisition of Hood, leaving the parent company to devote their activities to tires more exclusively.

The purchase by United States Rubber of control of Samson provides an excellent distribution chain for the former company on the Pacific coast and at the same time acquiring manufacturing facilities on the coast which will permit of competition with other leaders in the industry already established there.

The financial difficulties of Fisk and Ajax have been foreseen for some time, but there can be no doubt that the bad year contributed much to the final defaulting on their indebtedness or at least prevented satisfactory refunding plans to be negotiated. It is too early yet to determine whether these two companies can weather the storm, but both are going ahead with manufacturing. Protective committees of bondholders are attempting to work out some plans to escape liquidation proceedings.

Financial Conditions Within the Industry

Firestone's annual report of the fiscal year ended October 31 would seem to be an indication of what can be expected of most of the other leaders of the industry. After meeting the 6 per cent dividend charges against the preferred stock it failed to secure any return for the common shareholders. Goodyear is supposed to be the only company of the Big Four which will show a profit. General Tire and Rubber just made dividend requirements. The balance of the field of tire manufacturers will show losses. The rubber footwear companies and manufacturers of mechanical goods and other miscellaneous rubber products did not suffer to the same extent as the tire concerns, but few are expected to show satisfactory returns and are generally conceded to have felt the depression in like ratio to other allied industries.

Problems of merchandising and sharp competitive practices, combined with the mail-order and chain store trade have continued during the year to harrass the manufacturers. The announcement of various Standard Oil interests to market a special brand of tires through controlled service stations has been a great blow to the independent tire dealer.

The low market price for crude rubber naturally proved a sharp thorn in the side of the reclaimed rubber industry and scrap dealers. Reclaiming plants of manufacturing companies have become white elephants and the ratio of reclaimed used in proportion to crude has steadily fallen to well below 40 per cent, the lowest since 1925.

America's export trade in rubber goods during the year reflected the world wide depression and dropped sharply.

Along with the difficulties experienced within the rubber manufacturing industry, chemical and machinery suppliers to the industry also suffered. Overproduction of carbon black in particular has brought about a severe situation in that industry.

On the whole, it was a bad year and its passing is without regrets.

New Sponge Rubber Flooring

A SPONGE rubber flooring, marketed under the brand name of "Airtred" and manufactured by The St. Albans Rubber Company, Ltd., St. Albans, England, is finding an increasing demand throughout Great Britain, as a floor covering for moving picture houses.

The material has a ¼-inch sponge rubber base on which is firmly cemented a 1/16-inch sheet rubber in various colors or mottled shades. The construction gives an effect to the feet of walking on a soft carpet. The tough rubber surface backed on the sponge rubber underpadding is said to give unusual wear and at the same time can be easily cleaned with soap and water.

Because of its silent tread and hygienic qualities it is being used particularly in movies equipped for talkies and in hospitals, dental offices, steamship and gymnasiums.

The St. Albans Rubber Company are also large manufacturers of sponge rubber, which they supply in rolls, without joints, in practically any desired lengths and in widths up to six feet.

Extraordinary Tire Repairing

TIRE repairs that are distinctly "out of the ordinary" give students in the tire repair school of the United States Rubber Company, at Detroit, a wealth of experience that they could not acquire in years through ordinary repair work in the field.

The accompanying photograph shows two unusual jobs

that were sent to the school in order that the students might profit from them. The big tire is a sixteen-ply 12.75-20 truck tire weighing 228 pounds while the small one is a four-ply 5.00-4 airplane tire, weighing 3 pounds and six ounces, used to replace the tail skid.

Rubber-Aluminum Heat-Resisting Paint

THE idea that rubber may be heat-resisting when combined with aluminum powder is a new one. Yet when the best aluminum powder made by the Aluminum Company of America, is mixed with a rubber solution composed of rubber, devulcanized and put into solution, all in one operation by a process patented by Cyrus Field Willard, it shows an ability to resist heat that, it is claimed, transcends the performance of aluminum paint using an oil or varnish vehicle.

Iron plates painted with this new alumnium paint, it is stated by the manufacturer, can be heated bright red hot, equivalent to 1742° F. or 950° C., and when the metal cools down the paint is unaffected and retains its bright silvery color. Its coverage is said to be much greater and it can be used on smoke-stacks, automobile exhaust manifolds, airplane motors, electric stoves, oil tanks, and elsewhere in places where it is required to stand up against a high heat and where other aluminum paint will not stand. A growing demand is reported by the Willard Rubber Company, Ltd., of San Diego, Calif., manufacturers of this and other rubber base paints, operating as licensees under the Willard patents.

(Photo by Drucker and Baltes)

Rubber Manufacturers Hold Their 31st Annual Meeting

Last Year's Officers Are Re-Elected for 1931—Business Session is Brief—Banquet Attended by 500 Members and Guests—Senator Bulkley and Representative Seiberling Speak

THE Rubber Manufacturers' Association, Inc., held their annual meeting at the Hotel Commodore, New York City, on January 5. Contrary to the usual custom of electing officers by advancing the first vice-president to the position of president each year, the elections this time installed the same officers as those appointed last year. They include Samuel Woolner, Jr., president of Kelly-Springfield Tire Company, as president of the Association; J. D. Tew, president of B. F. Goodrich Company, as first vice-president; C. D. Garretson, president of the Electric Hose and Rubber Company, as second vice-president; H. B. Delapierre, Kelly-Springfield Tire Company, as treasurer, A. L. Viles was continued as general manager.

The following directors were re-elected to the board for a term of three years; E. S. Boyer, president, American Hard Rubber Company; E. H. Broadwell, vice-president, Fisk Rubber Company; H. L. McClaren, president, Ajax Rubber Company; C. Slusser, vice-president, Goodyear Tire and Rubber Company; W. S. Wolfe, vice-president, Seiberling Rubber Company, A. F. Townsend, president, Manhattan Rubber Manufacturing Division of Raybestos-Manhattan, Inc., was also elected to the board to fill the vacancy of William F. Pfeiffer.

SAMUEL WOOLNER, JR.
Re-elected President of the Association for 1931

The business meeting was very short, lasting only a few minutes and was held behind closed doors. No announcement of the proceedings have as yet been made by the Association, nor were the reports of the general manager and treasurer given as usual to the press. The report of the activities of the Association during the year will not be available until the annual report of the Association is published.

At the close of the general meeting the board of directors met for the re-election of the officers for the ensuing year. A luncheon for all those attending the session followed the board meeting.

The annual banquet of the Association was held in the Grand Ball Room of the hotel, music being rendered during the dinner by the Commodore Orchestra under the direction of Bernhard Levitow. Nannette Guilford, prima donna soprano of the Metropolitan Opera Company, sang several numbers in Italian, Spanish, French and English, being accompanied at the piano by Alice Taylor.

The principal speakers of the evening were United States Senator Robert J. Bulkley of Ohio and Representative

United States Senator Robert J. Bulkley of Ohio,

One of the Principal Speakers of the Evening

Francis Seiberling of the Akron district. Congressman Seiberling who is also a director of the Goodyear Tire & Rubber Company, defended the Hawley-Smoot Tariff Act, while Senator Bulkley protested against it. Both, however, agreed that government action should be taken in the present business depression without reference to party politics and that the stricter provisions of the Sherman anti-trust laws could be modified with benefit to industry.

President Woolner, acting as toastmaster, made several pointed remarks about the conduct of the rubber industry during the year just past, especially emphasizing the practices that had attended the scramble for certain national accounts by tire manufacturers. The industry, he said, had passed through "the three R's—Reductions, Rebates and Ruination." Speaking in the same vein, Harvey S. Firestone, Sr., president of the Firestone Tire & Rubber Company, declared that there is sufficient sanity in the rubber industry to bring back proper trade practices and ethical co-operation and pledged his company to work toward that end. The session was concluded with some humorous remarks by "Senator" E. H. Ford.

More than 500 members and guests were in attendance at the banquet, which was generally acclaimed as the best affair of its kind the Association has held in the last several years. The musical program and the speakers of the evening were received with hearty applause, while the spirit displayed by the gathering and the general conduct of the entire affair were unusual for such an event. The dinner committee consisted of President Woolner, G. B. Dryden and W. O. Rutherford.

Officers of the Rubber Manufacturers' Association, Inc., for 1931

President—Samuel Woolner, Jr., president, Kelly-Springfield Tire Company.

First Vice-President—J. D. Tew, president, The B. F. Goodrich Company.

Second Vice-President—C. D. Garretson, president, Electric Hose and Rubber Company.

General Manager—A. L. Viles.

Treasurer—H. B. Delapierre, treasurer, Kelly-Springfield Tire Company.

Assistant Treasurer—W. H. Blackwell, United States Rubber Company.

Assistant Secretaries—George Flint, R. H. Goebel, C. W. Halligan, and A. C. Grimley.

The Auto Business of 1930

IT is not too early to analyze the production and sales of automobiles during the last year. From figures recently compiled by L. F. Rothschild and Company, New York City, such an analysis, under various price classifications, shows an appreciable loss was suffered by automobile manufacturers of every class. For the eleven months ended November, production of passenger cars and trucks in the United States and Canada is estimated at 3,339,000 units indicating a total for the year of approximately 3,450,000 units, or a decline of 38½% from the previous year and the smallest total since 1922.

Division of passenger car production by price groups, as well as individual companies, is indicated by the latest available statistics on registrations, as follows:

Passenger Car Registrations

	Ten Months Ending October 1930	1929	Change
Low (3 makes)	1,618,564	1,981,808	—18.5%
Low-medium (2 makes)	123,126	328,265	—62.5
Medium (11 makes)	502,640	831,080	—39.5
High (5 makes)	56,722	85,038	—33.5

Detailed figures under each price group, are as follows:

Low Price Car Registrations

	Ten Months Ending October 1930	1929	Change
Ford	992,370	1,188,720	—16.5%
Chevrolet	566,623	714,602	—20.5
Plymouth	59,571	78,486	—24

Low-Medium Price Car Registrations

	Ten Months Ending October 1930	1929	Change
Essex	58,704	179,282	—67%
Pontiac	64,422	148,983	—57

Medium Price Car Registrations

	Ten Months Ending October 1930	1929	Change
Buick	111,598	156,237	—29%
Oldsmobile	45,551	84,267	—46
Nash	45,535	97,463	—53
Hudson	28,314	58,045	—51
Hupp	22,923	39,824	—42.5
Studebaker	51,646	76,873	—33
Chrysler	56,453	77,246	—27
Dodge	59,077	101,072	—41.5
Graham	28,160	56,230	—50

High Price Car Registrations

	Ten Months Ending October 1930	1929	Change
Cadillac	10,302	12,964	—20.5%
La Salle	10,363	18,041	—42.5
Lincoln	3,956	5,519	—28.5
Packard	25,987	40,960	—36.5
Pierce-Arrow	6,114	7,554	—19

Foreign sales of American passenger cars and trucks have declined sharply as the result of world-wide depression, political upheavals and tariff developments. Statistics on exports of assembled units from this country illustrate the severity of the decline as follows:

Assembled Unit Exports

	Ten Months Ending October 1930	1929	Change
Passenger cars	137,934	311,683	—56%
Trucks	73,801	172,964	—57.5

The importance of foreign sales to the industry (including Canadian sales) is indicated by the fact that such sales have averaged 18% of total American car production (including U. S. and Canadian plants) for the three years ending 1929.

Flax Field at Wisconsin Agricultural Experimental Station

FLAX vs. COTTON in Tire Fabric Construction

A New Process for Defibration of Flax Fibre May Make Linen a Possible Substitute for Cotton Fabric in Tires

By H. WALTER GROTE
Technical Superintendent, Murray Rubber Company

TEXTILE fibres have played an important part in the service of the human race and history tells us that linen, the product of the flax plant, has always been regarded as the finest of fibrous materials. In the Bible mention is made of precious linens but cotton is not referred to. Linen was regarded as precious because its manufacture entailed hard work with skilled hands and was a lengthy process. Linen, therefore, was too expensive for common use.

In the early past, cotton was not regarded as of any importance and it was only after the introduction of ginning machinery and expensive modern equipment that cotton assumed a position of world-wide importance.

The tire industry in particular, through its years of development, has relied upon cotton fabrics for one of its chief raw material constituents. Numerous experiments have been conducted and a great deal of time and money expended in order to find a satisfactory substitute for cotton fibre applicable to tire construction. Efforts with flax, hemp, jute, ramie, and silk fibre, for various reasons, proved futile. However, a new process for the defibration of flax fibre, developed and in operation in Germany by the Süddeutsche Rohstoff Verwertung, under the able direction of the patentee, Mr. Reinhold Geiss, may point the way to developments heretofore considered uneconomical and commercially impractical.

The annual yield of cotton per acre is approximately 170 to 200 pounds, the harvesting of the crop being an arduous procedure, accomplished principally by daily hand picking of the bolls as they reach maturity.

The average annual yield of defibrated flax stalks ready for spinning is about 400 pounds per acre. The flax straw can be expeditiously harvested by machinery.

The lengthy process in vogue at the present time, involving the retting, breaking, swinging and hackling of flax as well as the difficulties in spinning, weaving and bleaching, have so added to the cost of production of finished linen that the cloth has not been able to compete with cotton textiles. In fact, linen cloth has cost three times as much as cotton cloth. All efforts to reduce the high cost of production have heretofore been without success, and it is solely this high cost of production which has given to cotton its supremacy over linen as a tire fabric.

Flax of good quality can be successfully grown in the United States. It is moreover a crop well known to farmers and its cultivation presents no difficulty. At the present time flax gives a better return than cereals and it is not subject to the ravages of boll-weevils. Flax is a useful crop to grow before wheat, and the yield from the latter, in succession to flax, has been known to increase by 10 per cent. Harvesting operations are simpler and easier, and both fibre and oil can be obtained from the flax crop.

Innumerable experiments conducted at great expense

have been made during the last fifty years for defibration but without practical results. It is the general opinion that the process of defibration is a chemical one only. This, however, is not so. For complete success a system embodying a combination of agricultural, mechanical and chemical processes is required. The cost of defibrated material depends more or less on the quality of the raw material. Clean, long straw grown on good soil gives a high percentage of pure fibre and reduces labor cost. It is imperative, in order to extract from the plant a maximum amount of fibre, that all woody elements be removed and that all the pectins and glues be eliminated without loss of fibre.

Effect of Crops Grown 2 Years in Succession With Other Grains

1 Flax Following Wheat | **2 Flax Following Oats** | **3 Flax Following Barley** | **4 Flax Following Rye**

In order to secure a clean spinning fibre it is highly important that the crop be kept clean and free of weeds as these will cause much trouble besides reducing the value of it. Flax straw can either be hand-pulled or cut by suitable harvesting machinery. Under the new Geiss process the clean stalks are put into a specially designed machine where the woody parts are all separated, and within 15 seconds the pure bast material emerges. Retting is not necessary. From a hundred parts of dry flax straw, approximately 33⅓%, is bast material. The bast is then mechanically conveyed to a machine where it is thoroughly washed, and from there it goes into an automatic cooker containing water with a small quantity of inexpensive chemicals, and it remains there about an hour. After this treatment, the soft boiled bast is put through a series of machines which exclude all pectins and glues (approximately 45%-48%) leaving clear pure fibre which is transported to the drying machines. After being thoroughly dried, the material is removed and is then ready for spinning. The new process, from the time the raw material is fed to the machines until it emerges from the driers as spinning fibre, takes less than two hours. In actual practice, the yield of fine fibre from the raw material is approximately 17%.

The cost of the clean fibre will, of course, depend largely upon the cost of the raw material. On a basis of $10.00 per ton for straw, the fibre material can be produced for $60.00 a ton. Allowing a general estimate of $160 per ton to cover interest on capital, depreciation, overhead expense and taxes, the total cost of production per ton for the treated fibre would not exceed $220 per ton, which compares favorably even with today's price of cotton, including tare and loss from cleaning.

In place of coal, the refuse of the flax plants is used for the purpose of generating steam for power, cooking, washing and drying. This woody refuse has a calority of approximately 4300. The water used in the above mentioned process must be soft.

The price of a mill capable of dealing with 12 tons of straw and with an output capacity of 2 tons of fibre daily on two 9-hour shifts, would be approximately $100,000 complete. A unit of greater capacity would be proportionately cheaper. An output of 2 tons of fibre per day would employ about 10,000 spindles and require the cultivation of seven to nine acres of flax plants. In the present finished linen products a large proportion of pectins and glues is contained, and the presence of these constitutes a defect, inasmuch as they impart a stiffness and hard gloss to the cloth, making it suitable only for toweling, napkins, bed linen, etc..

By the new process, all the pectins and glues are entirely eliminated, rendering the finished product soft and pliable and capable of being put to a greater number of uses, such as the production of dress materials, cloth for industrial purposes, artificial leather, automobile tire fabric, automobile tops, nitro-cellulose, etc.

It must be understood that flax can be grown either for a straw crop or as an oil-seed crop. The shorter and

Flax Growing With Wheat

coarser stalks, which would necessarily be obtained from flax grown for oil-seed purposes, contain a coarse and woody fibre and would not be suitable for the economical production of fine fibre. The flax plants for the production of spinning fibre are sowed very closely so that the stalks grow tall. In the case of flax plants for the production of linseed oil, it is desirable to produce specimens with many branches and many seeds. In Germany the annual yield of flax straw per hectare, including roots and branches, is approximately 3,500 kilograms;—sometimes 4,000 kilograms with stalk lengths of approximately 70 centimeters. In Hungary a beautiful quality of flax reaches a height of one meter;—in Egypt up to 1.2 meters. The size of roots and branches remains the same, whether the stalks are tall or short, and therefore the longest stalks are the cheapest and require the least expenditure in preparation.

The spinning process between cotton and flax fibre at

(*Concluded on page 360*)

What Percentage *of* Gross Income *from* Salvage Sales Should Be Absorbed By Selling Costs?

By H. R. THOMPSON

Morgan and Wright (United States Rubber Company), Detroit, Mich.

IN going into this question, several questions immediately present themselves. These are presented as they occurred to me and the comments are either my own, or a statement of the policy of our particular company.

The first question is: What costs should be chargeable as salvage department expense?

The following list represents all possible costs that have occurred to me:

1st.—The removal of material from the plant. This might, or might not, include even refuse and floor sweepings.

2nd.—Delivery of the material from the plant to collection points assigned to the salvage division.

3rd.—Reclamation operations to fit the material for further use.

4th.—Preparation of material for selling, which includes sorting, cutting, baling, etc.

5th.—Loading material for shipment.

6th.—Shipping charges. Naturally, this item will not be included except where material is sold f.o.b. destination.

7th.—Cost of disposing of useless material. That is, burning or trucking to a dump.

Taking up these points as enumerated, our company considers that the salvage department's expenses begin after the material is delivered from the factory to the collection points assigned to the salvage division. The cost of collection in the factory and delivery to the salvage department is considered a legitimate item of factory overhead expense. I personally differ with the accounting procedure of our company by saying that I believe the function of a salvage department is to dispose of all items, either useable or worthless, which are of no further use in their present condition to the plant from which they came. This disposal can be accomplished in several ways; either by repairing or reclaiming for further use on the job for which the material was originally intended, or, by adapting material to some other use in the regular run of production, or, by selling the item as useable material to a concern whose requirements may not be so rigid, or, by selling to a surplus material and equipment buyer, or, by selling as scrap material for reclaiming or repairing, or, by buning as fuel, thus reclaiming the heat value, or, lastly, by burning or dumping as useless material, which is an expense with no return to offset it.

As to the cost of any reclamation operation, this is a legitimate charge against the salvage department, provided credit is given them for the value of the material reclaimed. If this material is returned to the factory without credit to the salvage department, the cost of reclamation should certainly be borne by the factory.

The cost of preparation of material for sale should certainly be included as salvage expense, but in making a comparison between various plants we find that certain plants carry this preparation on particular items a great deal further than other plants do on the same item. This is, in a great measure, dependent on the quantity of a particular class of material which is accumulated. In other words, where a plant gets scrap iron or steel at the rate of a car a day, or thereabouts, they will be amply repaid for the installation of a hydraulic baling press, a shear, a magnet, etc. If, however, the plant is not working in iron and steel, and only accumulates two or three cars a month, the difference in price they will receive by preparing their scrap would not pay for the installation of such equipment in a reasonable period of time.

Classification of Scrap

A similar condition will hold in connection with almost any other classification of scrap. Of course, the price received for scrap material prepared ready for the final consumer will naturally be more than for material sold as is, but in the first case the salvage expense will be a fairly large percentage of the actual sales cost, whereas in the second case, there will be no expense by the salvage department. I might make the observation that it is my personal opinion that preparation expenses are not warranted, except in such cases as the quantities are sufficient for carload shipments.

Certain material must be baled to be salable at all. As for sorting, the number of classifications into which material is divided are dependent in most factories on the amount of space available for doing this work, and for storing the prepared material. Take, for instance, scrap paper. If this item is sorted into four or five classifications, rather than being packed together and sold as mixed paper, it will take up just so many more times the amount of storage space before shipments can be made. Determination of how far to go on this sorting operation can only be made by actually sorting a lot of material to find what proportion of the various classes will be included and figuring an average price on the lot on that basis. The difference between this price and what you are actually re-

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ceiving for the mixed lot will determine how much expense is warranted in making additional classifications.

This item of preparation is the one which will make a comparison between any two plants the most difficult, unless some way can be devised to figure a reasonable selling cost for material sold unprepared, partially prepared, or completely prepared for the final consumer. The variation in the classes of material sold will also have a bearing, as the cost of preparation is considerably different in each of the general classifications; that is, iron and steel scrap, metals, rags, scrap rubber, waste paper; whereas surplus materials and equipment must each be handled individually according to its own requirements. I think that in the average plant it will be generally found that the costs are not kept accurately enough so that they can be broken down according to the classification of material sold. It begins to look more and more as though no reasonable basis for comparison of replies to the original question can be reached, and that the question should be, "Can a figure be arrived at which represents the relation between gross sales and selling expense?"

Now taking up the loading costs. We again run into difficulty as some material is sold f.o.b. cars, or trucks, whereas other material is sold "as is and where is," the customer doing the loading himself. It seems to me, however, that this will average fairly much the same for all plants, that is, the proportion of the material sold "where is" will probably run to a fairly uniform average.

Next, the question of shipping charges. It should be possible to charge back any freights against the return from the individual sale and let the salvage income represent the price on material, f.o.b. plant, in either instance. This would enable us all to work on the same basis.

Disposition of Useless Material

Lastly, the cost of disposing of useless material. As I have already stated, our company does not consider this as expense legitimately charged to the salvage department. If it is charged, it will certainly increase the percentage figure in the reply to our original question. It would, therefore, seem that we should get the answer to the question of whether or not this should be charged before trying to get an answer to the original question. I have endeavored to work up a report covering operations at our own plant. I will give you the result of this, taking each classification separately.

Our iron and steel scrap represents about 15 per cent. of our volume, but only 7 per cent of our gross income. Our sales expense on the classification amounts to about 12½ per cent of the gross income. None of our iron and steel scrap is prepared and about half is sold f.o.b. cars, while the other half is sold on the ground and loaded on trucks by the buyer.

Our metal scrap represents only about 1 per cent of our volume, but brings in 4 2/3 per cent of the gross income. The sales cost absorbs 5 2/3 per cent of the income on this type of scrap. We sort our metals and separate them except where it is extremely difficult to remove iron. All of this classification is loaded and trucked by the buyer.

Rags and burlap represent about 5 per cent of our volume, but brings in 14 per cent of our total income. The sales expense of this item is 6¼ per cent. It is all sold f.o.b. cars, and is sorted, classified and baled before shipment.

Scrap rubber being being our major item, represents approximately 30 per cent of our volume, and brings in 31 per cent of our income. It is all classified very carefully and sold f.o.b. cars, with the exception of scrap tires which are loaded loose. The sales expense on this item runs slightly over 7 per cent.

Waste paper, sold in six classifications, all f.o.b. cars, or trucks, represents 20 per cent of our volume, but being a cheap commodity, it only brings in 6 per cent of our gross return. Due to the low price and the necessity of sorting and baling, the sales expense on this item will consume slightly under 44 per cent of the return on this classification.

Surplus materials only represent about one-half per cent on our volume, but brings in 5 1/3 per cent of our gross income. The sales expense on this item consumes about 16½ per cent of the income.

Surplus machinery and equipment represents about 20½ per cent of our volume, but brings in 18 per cent of our gross income. The sales expense figures just under 5 per cent. Some equipment is sold as is, whereas some is inspected and guaranteed, which necessitates a certain amount of expense on necessary repairs. Everything is sold f.o.b. cars or trucks.

As regards returnable containers, it is rather difficult to estimate what percentage of our volume they represent, but we know they bring in 10 per cent of our income. They are all sold f.o.b. destination, but our accounting procedure does not include the freight charges in the expense of the salvage department. The sales cost, therefore, shows up as being only 1¾ per cent, which I admit does not seem proper.

Miscellaneous items include barrels, cinders, etc. These represent 8½ per cent of our volume and 4 per cent of our income. These items are practically all picked up by the purchaser and sold over long time contracts so that the sales expense is very negligible, and I estimate that if it could be figured it would amount to less than 1 per cent.

Total Selling Costs on Scrap

Summing up the entire list on a total volume of approximately 6,400 tons per annum, our sales expense will run 8¾ per cent as an average over the entire lot.

These figures just quoted will perhaps give some idea of what variables will be encountered. It is possible that any other rubber factory will have an accumulation which will average fairly close to that of our plant, but it is not likely that plants working in other lines will be able to make a comparison, except on the basis of particular classifications. It seems to me that it will be practical to make comparisons on this basis. The points I have brought out would seem to indicate that a percentage figure which is correct for one plant will be out of line for another, but by breaking down the income and expense figures under the various classifications, any plant would be able to make a comparison with any other plant. It may, or may not, be practical to do this.

Samoa Estates Suspend Tapping

WITH the present price of crude rubber around 5d per pound, work on the New Zealand government reparation rubber estates in the mandated islands of the Samoa group has been suspended, according to J. L. Hughes, who has been managing the government properties for the past five years. The total area under rubber cultivation is approximately 3,000 acres.

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Automobile Show Exhibits Many Improved Models

Numerous Sales Reported Are Encouraging to Dealers and Manufacturers—Rubber Mountings Are Featured

WITH more than 200 separate exhibits of cars, light trucks, accessories, tires and shop equipment, the 31st annual National Automobile Show opened on January 3 for an eight-day session, at the Grand Central Palace, New York City. As the duration of the show drew to a close, it seemed likely that the heavy attendance would equal and might possibly surpass the record crowds that witnessed the 1930 exhibit.

Following the usual policy of the Rubber Manufacturers Association, the larger tire and rubber manufacturers were not represented by displays. There were, however, three or four special exhibits of rubber products by other firms, while all the new models of passenger cars included rubber parts and accessories. Rubber vibration dampers are being used on many cars on the front end of the crankshaft to prevent, or reduce, torsional vibration of the shaft.

The use of rubber mountings has greatly increased. Pontiac even uses rubber mountings under and over the springs at the axles. There are about 40 points where rubber is used on the new Pontiac to prevent the transmission of vibrations. The engine mounting of the new Willys model is on rubber, and several other cars are also using rubber engine mountings. Rubber shackles are more common, and more makes have rubber between the frame and body to stop the "telegraphing" of noises. Additions to the users of rubber shock insulators are Reo, Oakland, Pontiac, Marmon and several others. There are uses of rubber in the clutch, rubber in the driving line, rubber almost everywhere to stop noise.

There were two tire manufacturers among the exhibitors. The Custom Built Tire Corporation of America, 161 West 64th Street, New York City, showed its Martin 11-ply cord tire line and also exhibited the Pilot-Ray, a headlight that turns with the steering wheel, for which it is the exclusive distributor. The Sunbury Safety Tire Company, Sunbury, Pa., also maintained an exhibit. In addition to these, there was a display of McClaren tires in booth of Ebling-Murray, Inc., New York City jobbers.

Another interesting rubber exhibit was that of the Pneumatic Cushion Corporation, showing the Airian pneumatic cushions for passenger cars. These cushions, which are manufactured by the Seiberling Rubber Company for the Airian Products Corporation, New York City, are deep pneumatic air bags to be used in place of spring cushions. Two air bags are used in each seat and back, while tubular stays or "grommets" give stability to the cushions and permit their use under extremely low inflation

While not maintaining exhibits at the show, the leading tire manufacturers had representatives present in New York City during the week. Several suppliers of tire valves, valve parts, repair equipment and related lines had displays at the show and will also exhibit at the Chicago show from January 24 to 31.

Flax vs. Cotton

(Continued from page 356)

the present time is quite different. Cotton has a short natural staple. When it is cleaned, ginned, free from dust, etc., it is carded, combed and spun in a similar fashion. The present method with linen fibre, when it is hackled, is to bring it through hot water, whereby the pectins are soaked before coming to the spindle. The fibre is then stretched and twisted into yarn. It is an ugly operation, coupled with disagreeable work, as the soaked fibre frequently tears causing the spindle to be stopped for retying.

New Process Needs No New Machinery

The new process, which with modifications is equally applicable to hemp and ramie fibre does away with all difficulty. The fibre, as above mentioned, is separated to its elementary state, producing average staple lengths similar to that of cotton. It can be spun on ordinary cotton machinery so that a cotton manufacturer, spinning the new flax fibre in his cotton mill, could indeed call himself a flax spinner and linen manufacturer. The process of spinning this fibre on cotton machinery is quite the same as with cotton material and the yarn can also be woven on cotton looms. The product is a really pure linen cloth. Since it does not contain any pectins and glues, it is soft, cannot be crumpled, and in washing will keep its original state. It is twice as strong as cotton cloth.

The bleaching of linen manufactured in the old way also entails a lengthy and expensive process. When the yarn is spun, it has to be bleached with chemicals, and this work calls for careful attention, as too much or too little can very easily ruin the quality. After the yarn is woven, the linen cloth must be bleached again. This process takes time and labor. There is also the natural process of bleaching on grass, a method which affords a time of some months. The difficulty with either method is to bleach the glues. In the new linen product, no pectins or glues are contained and it is absolutely clean and colorless like cotton, so that bleaching does not require any more effort than with cotton.

Recalling some early experiments with flax fibre fabrics in tire construction, two outstanding faults were experienced. First, the old type of flax fibre was too brittle resulting in rapid fatigue under flexing, and second, the fact that due to the natural oils, pectins, and glues contained in the fibre, poor adhesion resulted during vulcanization between the fabric and rubber compounds.

The new process of defibration is said to produce a very soft, pliable, and pure fibre free from excess oils, pectins, and glues, and of such physical characteristics as to well merit the serious investigation of the progressive technicians in the rubber manufacturing industry.

French Tire Output and Consumption

THE production of automobile casings in France for 1929 approximated 4,200,000 units—about 1,300,000 in excess of the annual consumption. Several companies scattered at various points throughout the Republic produce automobile casings and inner tubes, but only five are of any great importance. The list is headed by Michelin—still the largest producer in Europe—followed by French Dunlop, French Goodrich, Bergougnan, and Vigor.

Michelin has a production capacity of approximately 13,000 to 14,000 tires daily, but it is not believed that the factory has ever turned out more than 12,000. Its daily production at present is estimated at 8,000 to 9,000.

The production of Dunlop is estimated at 3,000 daily, Goodrich 2,000 and Bergougnan 400. Vigor manufactures no heavy-duty tires, only certain dimensions of balloon tires. Its production is perhaps around 200 daily. All in all, the average daily production of tires in France is not over 14,100 units.

The annual consumption of tires in France for 1929 was placed around 2,900,000, of which 1,000,000 is for original equipment and 1,900,000 is for replacement. The consumption per car is rather low, the absorption per passenger car being estimated at 1¾ tires per year and that of light truck 2½ tires.

French Tire Import Trade

It is believed that 10 per cent of the consumption of tires in France is supplied principally by six foreign imported makes, or about 290,000 during the past year. Englebert, of Belgian manufacture, has a particularly important sale in the north of France. The public favor is said to be prompted by the large discounts granted by the French representatives. A prominent American trade name is second in popularity and has a special advantage, owing to the existence of its English plant, from which it imports exclusively. It is possible for it to import tires from England instead of from America, and thus pay a duty of 2.50 francs per kilo net weight, whereas tires imported from the United States pay according to the rate of 3.75 francs per kilo. Another important American make, ranking about third, is imported from both the English and American plants. An American make having only a factory in the States has recently established an agency and is selling well. Continental, which is now appearing upon the French market for the first time since the war, is meeting with increased demand. The sales of Pirelli are practically limited to original and replacement equipment on automobiles of Italian manufacture.

French exports of tires have shown a decrease in recent years, owing to several factors—the increased competition from tires bearing American trade names manufactured at present in the States, Canada, and Great Britain; the installation of the Michelin subsidiary factory in England; and the present economic depression from which all export nations are suffering alike. The completion of the Michelin plant in Germany, expected sometime in 1931, will also have a material effect upon French tire exports to that country and neighboring States.

Preliminary Facts and Figures of the United States and Canadian Automobile Industries in 1931*

Cars produced in U. S. and Canada	2,943,200
Trucks produced in U. S. and Canada	561,800
Tire shipments	52,700,000
Wholesale value of rubber tires for replacement	$429,000,000
Motor vehicles registered in U. S. (From state reports)	26,718,000
Per cent gain in registration over 1929	.8%
World registration of motor vehicles	35,518,000
Per cent of world's automobiles in U. S.	75%
Rubber used by automobile industry	82%
Crude rubber used by motor industry, 1930 (lbs.)	686,000,000
Cotton fabric used in tires, 1930 (lbs.)	195,770,000
Number of American motor vehicles sold outside U. S. (U. S. exports and output in U. S. owned Canadian plants)	561,000
Per cent decrease in foreign sales under 1929	44%
Per cent of production sold outside U. S.	16%

*Figures by National Automobile Chamber of Commerce.

Canadian Rubber Industry Shows a Steady Advance in Activities

Official Dominion Census Report for 1929 Lists 44 Manufacturing Establishments With a Capital Investment of $73,877,000

THE Dominion Bureau of Statistics has just released its regular annual census report on the Canadian rubber industry. The report covers production of rubber goods, employment, use of fuels, power, and electricity, and consumption of various raw materials in a very comprehensive and detailed manner, and appended to the report are statements of Canadian imports and exports of rubber manufactures, and a complete list of Canadian manufacturers of rubber goods, with addresses and mention of each company's line of product. A copy of the report will be loaned to interest clients by the Rubber Division of the U. S. Department of Commerce.

The report shows a consumption of 76,156,576 pounds of crude rubber, and 25,146,289 pounds of reclaimed rubber, or 33.0 per cent as much reclaim as of crude in 1929. This compares with a ratio of 39.3 per cent in 1928, when consumption of crude was 67,310,369 pounds, and reclaim was 26,451,017 pounds. The production of automobile casings numbered 4,506,185 in 1929 against 4,338,578 in 1928.

The consumption of rubber for all purposes divided by the number of casings produced, shows that rubber consumption per casing increased from 15.5 pounds in 1928 to 16.9 pounds in 1929, while consumption of reclaim for all purposes declined from 6.10 pounds to 5.58 pounds for each casing produced. This is in line with the experience of the United States industry, and with still lower prices for crude rubber, and the tendency toward improved tires, it is logical to expect further decline in the use of reclaim and a higher consumption of crude rubber per casing for 1930.

The number of establishments reporting in 1929 was 44, of which 33 were located in the province of Ontario, 9 in Quebec and 2 in British Columbia. Listed according to products, the number of factories manufacturing tires only was 4, tires and footwear 2, and tires and other rubber products 6. The number making footwear only was 8, footwear and other rubber products 2, whilst those making rubber products other than tires and footwear were 22 in number.

The amount of capital invested in the rubber industry in 1929 was $73,877,478 to which the rubber tires and other rubber goods section contributed $56,697,543 and the footwear section $17,179,935. Fixed capital in the industry as a whole amounted to $42,774,839 and working capital to $31,102,639.

The number of persons employed in the industry in 1929, exclusive of outside piece workers, was 17,796, of whom 2,259 were salaried employees and 15,537 were wage-earners. The total amount of salaries and wages paid in 1929 was $20,134,501, of which $4,156,968 was for salaries and $15,977,533 for wages.

The total cost of all materials used in the industry was $42,940,747.

The gross value of production for the entire industry amounted to $96,934,660 in 1929, being a decrease of $274,053 or .28 per cent over 1928. Of the three main classes of products, rubber tires and tubes accounted for $51,386,140 or 53 per cent of the total, rubber footwear for $29,720,991 or 30.7 per cent and other rubber goods for $15,827,529 or 16.3 per cent. Automobile tire production increased in value over the preceding year by $1,677,602 or 3.38 per cent, whilst rubber footwear decreased by $2,691,620 or 8.3 per cent, and other rubber goods increase by $739,965 or 4.9 per cent.

The net value of production, found by deducting the cost of materials from the gross value of products, advanced from $52,090,143 in 1928 to $53,993,913 in 1929, or 3.65 per cent.

A comparison of the principal statistics of the rubber industry in Canada is afforded in the following table for the calendar years 1927, 1928, and 1929. The number of plants reporting in 1929 decreased by 2.22 per cent from 1928, whilst capital investment increased by 4.9 per cent, employees by 3.9 per cent, salary and wage payments by 4.1 per cent and the cost of fuel by 4.5 per cent. The cost of materials decreased by 4.8 per cent and the gross value of products by .28 per cent.

Principal Statistics	1927	1928	1929
Establishments reporting	44	45	44
Capital investment	$66,266,064	$70,459,066	$73,877,478
Employes on salaries	1,900	2,145	2,259
Salaries paid	$3,243,988	$3,602,753	$4,156,968
Employees on wages	13,169	14,950	15,537
Wages paid	$13,377,752	$15,340,977	$15,977,533
Cost of fuel	$649,892	$688,565	$719,529
Cost of materials	$44,724,502	$45,118,570	$42,940,747
Gross value of products	$91,413,730	$97,208,713	$96,934,660
Net value of products	$46,689,228	$52,090,143	$53,993,913

Manufactures of Rubber Goods Other Than Tires, Inner Tubes, and Footwear

	1928		1929	
Articles Manufactured	*Quantity*	*Selling Value* $	*Quantity*	*Selling Value* $
Rubber clothing, coats ..... No.	90,300	339,676	83,159	305,725
Rubber clothing, headwear ..... No.	18,575	15,881	20,334	19,083
Rubber clothing, all other (value only) ..... $	.....	218,920	.....	206,473
Rubber and composition soles .... Prs.	3,534,885	896,363	6,453,291	1,503,084
Rubber and composition half soles ..... Prs.	499,163	130,128	819,105	185,561
Rubber and composition heels .... Prs.	20,600,402	1,611,319	21,193,603	1,433,643
Tire repair gums and fabrics, Lbs.	1,819,505	864,347	1,555,126	882,173
Friction tape and splicing compounds ..... Lbs.	683,460	232,064	852,909	316,108
Rubber cement ..... Gals.	225,562	227,919	172,079	166,596
Rubber mats and matting ..... Lbs.	2,265,465	426,016	2,718,938	525,994
Rubber tiling and sheet flooring ..... Lbs.	746,257	170,444	970,546	223,619
Sheet packing ..... Lbs.	399,346	91,710	414,361	89,406
Battery containers ..... No.	1,702	3,269	444,177	249,614
Rubber belting ..... Lbs.	6,066,377	3,033,531	5,585,380	2,654,533
Rubber hose ..... Lbs.	5,109,685	2,096,549	5,816,089	2,196,194
Hospital sheeting ..... Yds.	185,825	84,842	195,951	90,337
Wringer rolls ..... Lbs.	.....	27,093	.....	31,405
Roll covering, all other than wringer ..... Lbs.	.....	222,726	.....	257,096
Fruit jar ring rubbers ..... Lbs.	388,099	113,411	451,370	130,913
Drug sundries (value only) ..... $	.....	751,144	.....	719,476
Hard rubber ..... $	.....	271,657	.....	325,604
All other rubber goods specified (value only) ..... $	.....	3,136,451	.....	3,132,665
All other rubber goods not specified (value only) ..... $	.....	122,104	.....	182,227
Totals	.....	15,087,564	.....	15,827,529

EDITORIAL COMMENT

Extra Dividends for Unemployment

IF ANY good at all will come out of the present grave unemployment situation it will be in the nature of a crystallization of some of the many plans which have been promulgated for stabilizing employment or providing for the part-time payment of such employees who are temporarily laid off. Many of these plans are now being tried, such as rotating employment, shortening the working week or the day, etc., but more time will be necessary to prove their individual effectiveness. And, of course, probably no one plan will fit all industrial or business establishments.

An interesting contribution to these efforts has been inaugurated by the General Tire and Rubber Company. It is presented in a unique form, but its ultimate purpose is the stabilization of employment and ameliorating the distress of temporarily laid off workers.

At its recent annual meeting the General Tire and Rubber Company set aside a sum equal to $1 per share on the company's common stock, to be used during 1931 in the interests of the company's employes in providing steady employment through the financing of out-of-season sales. It will also provide money which may be loaned to any of the employes who are temporarily laid off. The money will be advanced through the General Tire Acceptance Corporation, a subsidiary of the company.

Workers who need their wages in winter months to buy fuel, and food and shelter will be given more steady employment through the dull winter months through the use of this fund which will help to absorb interest charges and obtain business at the time when it can be handled to most advantage.

"We do not regard this as a philanthropic move nor do we have any intention of indulging in any crack-brained theories," said William O'Neil, president of the company, in explaining the plan. "It is simply a matter of good business. We believe that the saving in plant costs which will result will take care of the sum which we have set aside.

"When the directors decided to pay an extra dividend this year, they also decided that they would cut in two parts the amount available for this extra dividend, so that the workers might get as square a deal as the stockholders. Last year, General Tire workers averaged in income only 9 per cent less than they received during the abnormally busy year of 1929. We hope to be able to maintain their earnings during 1931 at as least as high a point as in 1930.

"We believe that experience will show that it has been a wise step to use a part of our extra dividend in this way. If so, it is possible that we may do the same thing with other dividends in the future."

Predictions on the Upturn

AS WE enter the new year the topic uppermost in all minds is the present business situation and the chances for better conditions. The economists and statisticians have been working overtime to prove this and that theory which will lead to this and that conclusion. Most of their deductions have proved to be delusions. However, it is but natural for us to still grasp at any hopeful expression of opinion which might come from an authoritative source, and so we are pleased to learn that the Cambridge Associates of Boston have estimated the average length of previous depressions to have been of slightly over 18 months' duration. They consider the present period of contract to have now lasted about fifteen months and that "an upturn in the early Spring of 1931, which many prominent economists forecast, would make the length of the present business decline coincide almost exactly with the eighteen-month average."

Another interesting study on the question of just what will start the upturn in business and when that upturn can be expected, has been made by Warren M. Persons, former Harvard economist in *Barron's Weekly*. After a careful analysis of business cycle charts, he explains that this is the way depressions end:

> "Drastic business recession ultimately encounters the resistance of the purchases of consumers who utilize their resources to protect their standards of living; this resistance sets a limit to the business depression and substitutes stability for decline; stability of trade results in new orders for goods and increased manufacturing activity."

After a study of statistics showing "how business has behaved in the United States for the last fifty years," Mr. Persons goes so far as to present a probable, tentative timetable of expected recovery as follows:

Probable business developments	Not earlier than	Not later than
Trough of depression ends.....	November, 1930	March, 1931
Recovery follows thereafter and continues from month-to-month without important interruption.		
Normal business attained.....	November, 1931	June, 1932

The RUBBER AGE

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Representatives in all the rubber centers of the United States, Canada, England, France, Germany and the Middle East.

The Rubber Industry's CURRENT NEWS

Financial—Personals—New Rubber Products—
Building Operations—Manufacturing—Exports

RUBBER COMPANIES GET TREASURY TAX REFUNDS

Rubber manufacturing companies were among those receiving large tax refunds from the Treasury Department during the last fiscal year, as reported to Congress and made public on December 29. The General Tire & Rubber Company, Akron, O., received the largest refund in the amount of $40,404.

The Racine Auto Tire Company, Walter C. Palmer, trustee in bankruptcy, Racine, Wis., was awarded a refund of $37,789. The Samson Tire & Rubber Corporation, Los Angeles, Cal., received a refund of $16,380 and the Archer Strauss Rubber Company (Myer L. Orlov), Boston, Mass., a refund of $7,217. A refund of $12,022 was returned to the Goodyear Tire & Rubber Company and one of $10,770 to the Polson Rubber Company, Garrettsville, O.

Among the suppliers to the rubber industry, the Farrel Foundry & Machine Company, Ansonia, Conn., makers of rubber machinery and now a part of the Farrel-Birmingham Company, Inc., was awarded a refund of $136,493. The Eastern Carbon Black Company (Price, Smith and Spilman), Charleston, W. Va., received a refund of $24,649 and Godfrey L. Cabot, carbon black producer of Boston, Mass., a refund of $5,212.

NEW JERSEY RUBBER MEN ELECT NEW OFFICERS

The annual meeting and election of officers of the Rubber Manufacturers' Association of New Jersey was held recently at Trenton. A. L. Viles, general manager of the Rubber Manufacturers Association, Inc., addressed the members on the general situation in the rubber industry.

The following officers were elected: John A. Lambert, Acme Rubber Company, president; I. Ely Reed, Mercer Rubber Company, vice-president; Charles E. Stokes, Jr., Home Rubber Company, secretary; Horace B. Tobin, Woven Steel Hose & Rubber Company, treasurer.

Reading Rubber Plant Fire

An explosion in the plant of the Reading Rubber Company, Reading, Mass., last month sent up a sheet of flames which drove 25 workmen to the street and caused damage of several hundred dollars. The local fire department quickly extinguished the blaze.

Barr Force at Peak

The personnel of the Barr Rubber Products Company, manufacturer of toy balloons at Sandusky, O., is now at the highest point in its history, according to Nelt Barr, president. The plant's payroll at the present time totals 276.

Goodyear Expands at Gadsden

The Goodyear Tire & Rubber Company is adding machinery to its factory at Gadsden, Ala., and will increase the output of that plant to 7,000 from 6,000 tires a day. The force employed in the plant will be increased by about 400 men.

Road Show at St. Louis

The 28th annual convention and Road Show of the American Road Builders' Association will be held at the Arena in St. Louis, Mo., from January 12 to 16. A feature of the exhibit will be a display of motor freight equipment.

U. S. RUBBER REDUCES BICYCLE TIRE PRICES

What is termed a "substantial reduction" has been made on prices to jobbers on bicycle tires by the United States Rubber Company, according to a recent announcement. "We have made a substantial reduction in prices to jobber," the statement says, "and have established a 25-pair lot and less than 25-pair lot prices to dealers which provide a margin of profit to the jobber that should entitle us to his support.

"We have also established 100-pair lot prices for the large dealers who, after having taken one shipment of 100 pairs, may purchase pick-ups at the 25-pair lot price."

FISK RUBBER COMPANY FILES $60,000 TAX SUIT

Suit for $60,000 was entered in federal court at Boston, Mass., last month by the Fisk Rubber Company, Chicopee Falls, Mass., against the government. The rubber company seeks to recover $41,851 in taxes alleged to have been collected illegally.

The tax was collected from the Federal Rubber Company, Racine, Wis., for the year 1919. The Fisk company subsequently took over the Federal firm and in its suit asserts its right to recover the taxes which it avers were erroneously assessed and collected from that concern.

SUNBURY TIRE FACTORY IS READY FOR OPENING

The Sunbury Tire Manufacturing Company, Sunbury, Pa., has completed the installation of equipment in its factory building and is now ready to commence operations. Modern tire making machinery to the value of more than $30,000 has been installed in the plant during the past month.

The factory will start its production activities with a schedule of 100 automobile and airplane tires and tubes daily. This rate of output will be increased as soon as the market for the product assumes definite shape.

B. F. GOODRICH COMPANY HAS 60TH ANNIVERSARY

The B. F. Goodrich Company observed its 60th anniversary on December 30 and 31 with appropriate ceremonies. On December 30, 1870, Dr. B. F. Goodrich bought the lots on which his original factory was built at Akron to make rubber hose and belting. The original articles of co-partnership were drawn on the following day.

The first sales of the company were made in May, 1871, and the total sales for the first year amounted to $49,403.04.

HIGHER TIRE PRODUCTION IS SEEN BY HAMMESFAHR

That the tire industry is in a better position than the automobile trade is the opinion of W. S. Hammesfahr, of George H. McFadden & Bro., in a recent review of the crude rubber situation.

"While it is, of course, a well known fact that tire production at present is very small," says Mr. Hammesfahr, "it must not be overlooked that tire inventories, in proportion to the number of cars in use, are subnormal, and will, therefore, make the manufacture of larger numbers during 1931 almost a certainty.

"Forecasts for 1931 range in the neighborhood of 65,000,000 units. Production this year is not likely to exceed 52,000,000 tires. In many well-informed quarters it is believed that because of the present small stocks tire makers will probably commence soon after the turn of the year to increase their productions, and an improvement by at least 20 per cent is freely expected for the first quarter of 1931 as compared with the last three months of the current year."

CABOT WORKERS ASSIST UNEMPLOYMENT RELIEF

Workers of Godfrey L. Cabot, Inc., carbon black manufacturer, have developed a plan at the Pampa, Tex., plant to co-operate with local committees for the relief of the unemployment situation. This was announced on December 17 by R. G. Allen, local manager of the Cabot interests.

Under the plan voted by the employes, each man will work 8 hours a day 5 days a week instead of 8 hours a day 6 days a week. In some cases the division will amount to as much as a sacrifice of 15 per cent in wages. The sum that will be redistributed will total $2,400 weekly. The company will contribute about 30 per cent, while 70 per cent will be given by the employes. A poll at each of the four plants resulted in unanimous approval of the plan.

George Briggs, board of city development manager, commended this action, saying, "The employes of the Cabot companies have set a precedent which we hope will be followed by every industry in this section. Their action is thoroughly humanitarian, to say the least."

U. S. RUBBER CONTINUES BONUSES FOR DEALERS

The tire department of the United States Rubber Company will continue its long-established policy of giving the dealers bonuses based on a certain volume of business, according to L. M. Simpson, general sales manager of the tire department, at Detroit. Reports emanating from a convention of its district managers to the effect that this policy would be abandoned and a system of immediate discounts established in its place are incorrect, Mr. Simpson stated.

"Bonuses to stimulate efforts by dealers are a vital element in business," said Mr. Simpson, explaining the company's policy in this matter. "If a dealer knows that by handling a certain amount of business he will make more than otherwise, then he is bound to bend every effort to get that business. He will go out after it and be constantly on the alert.

"From time immemorial the system of reward has spurred the human race onward. It has worked out to the best advantage. In sum and substance the bonus system is this same reward system. It holds out an incentive, and incentive is the life blood of successful merchandising."

Collins Sees Business Rise

Charles Collins, executive head of the McClaren Rubber Company, Charlotte, N. C., is looking for the tire business to recover "a little faster than other lines," according to a statement made late last month. A factor which Mr. Collins believes will aid the tire business is the drop in value of second hand cars. "More people now will drive their cars three or four years instead of two," he said, "and thus will have to outfit their automobiles with new tires."

"Lotta Miles" is Revived

The Kelly-Springfield Tire Company is bringing back to its periodical and outdoor advertising the character of Miss Lotta Miles, familiar a decade ago in all of the company's publicity work. The original sunbonneted pictures of Lotta Miles were posed for by Alice Nielsen, well known actress, but the current advertising pictures a thoroughly modern young lady in blue sweater and beret. The name of Lotta Miles was used last year to identify a new line of Kelly tires.

A. S. T. M. SYMPOSIUM ON ABRASION TESTING

Preliminary plans have been completed for holding a symposium on the abrasion testing of rubber products to take place at the annual meeting of the American Society for Testing Materials in Chicago June 22 to 26, 1931. The papers will include theoretical and practical considerations, and will involve not only abrasion tests but also cutting and tearing tests.

The initial date for the receipt of titles of papers has been extended to the middle of February and every one who has a paper or suggestions regarding the symposium is requested to communicate with Arthur W. Carpenter, Secretary of Committee D-11 on Rubber Products of the A. S. T. M., the B. F. Goodrich Company, Akron, O., or with Harlan A. Depew, Chairman of Subcommittee XIV on Abrasion Tests, the New Jersey Zinc Company, Palmerton, Pa.

TO DISCUSS TIRES AT S. A. E. ANNUAL MEETING

More than 2,000 members of the Society of Automotive Engineers are expected to be present at the annual meeting to be held from January 19 to 23 at the Book-Cadillac Hotel, Detroit, Mich. All phases of automotive engineering will be covered in the various sessions during the five days.

At the chassis session, Burton J. Lemon, of the United States Rubber Company, will discuss "Tires for Drop-Centre Rims," and R. K. Lee, of the Chrysler Corporation, will talk on "New Uses for Rubber on Cars." C. S. Ash, of the Kelsey Hayes Wheel Corporation, will read a paper on "The Trend in Drop-Centre Rim Construction."

CARLISLE RUBBER VOTES 3200% STOCK DIVIDEND

Stockholders of the Carlisle Tire & Rubber Company, Carlisle, Pa., have approved an increase in the company's common stock from 5,000 to 200,000 shares, a stock dividend of 3200 per cent going into effect. The preferred capitalization has also been increased from $250,000 first preferred stock to $2,000,000 first preferred 7 per cent cumulative preferred stock, consisting of 20,000 shares.

For each share of existing common outstanding, the company will give 32 new common shares. Two shares of the new common stock will also be given to each purchaser of one share of the new preferred.

Charles S. Moomey, president and treasurer, declares that the outlook is for satisfactory volume in 1931.

NORTHERN RUBBER PLANT IS SOLD TO BONDHOLDERS

The plant of the bankrupt Northern Rubber Company at Barberton, O., was purchased at a receivership sale last month by the first mortgage bondholders for a price reported as $40,100, in addition to court costs. There were first mortgage bonds outstanding to the amount of $40,100 and second mortgage bonds amounting to $105,000.

Suit for foreclosure on the firm's properties was brought last July. It is reported that the bondholders will attempt to resume operations as soon as a suitable plan can be worked out.

Rubber Stocks Slightly Lower

Securities of all rubber manufacturing companies closed the year of 1930 well below the quotations current at the end of 1929. The present year opened with prices still near bottom, Goodyear, Goodrich and U. S. having slipped back during the fortnight. Closing prices on January 6, as compared with the market on December 18 and with the 1930 high and low quotations, follow:

	Last Price		—1930—	
	Jan. 6	Dec. 18	High	Low
Aetna	—	—	8½	3½
Ajax	—	⅜	2½	¼
American Hard Rubber	—	—	3⅞	3¾
Dayton "A"	—	—	81	30
Falls	—	—	4¾	1
Faultless	—	35	37	32½
Firestone	—	18¼	33⅛	15⅝
do. 6% pfd.	58⅞	—	87⅞	53⅝
Fisk	½	½	5½	½
do. 1st pfd.	2¼	1⅝	21	1¼
General	—	—	163	99
do. pfd.	—	—	91	83½
Goodrich	15⅝	17¼	58½	15¼
do. pfd.	—	65	104½	62
Goodyear	40⅞	47	96⅞	35¼
do. 1st pfd.	82	80¾	102	78¼
India	—	12	25½	8½
Intercontinental	2⅝	1⅞	7½	1½
Kelly-Springfield	1⅝	1¼	6⅛	1
do. 6% pfd.	—	29½	39	27
Lee	3¼	3¼	11	3¼
Mohawk	—	5½	16⅝	4⅞
do. pfd.	—	—	55	15
Norwalk	—	⅝	4	½
Pirelli	32½	—	50⅞	30½
Raybestos-Manhattan	—	19	58⅞	16⅞
Seiberling	5	5	18½	4
do. pfd.	40	—	78	30
U. S. Rubber	12¼	13¼	34	11
do. pfd.	23	22½	63⅞	19½

Names in the News

R. L. CATHCART has been appointed district sales representative of the Zinc Oxide Department of the St. Joseph Lead Company, with headquarters at the Oliver Building, Pittsburgh, Pa. Mr. Cathcart is well known in the pigment field, having for many years represented the New Jersey Zinc Company in Pittsburgh in the sale of pigments and other items. The St. Joseph Lead Company's zinc oxide plant is located at Josephtown, Beaver County, Pa., and produces there high-grade lead free zinc oxides. This is a new plant, employing the latest developments in the art of zinc oxide manufacture.

C. C. GEHRING has been appointed district manager in charge of the new district office of the United States Rubber Company at Columbus, O. Sales of tires in 65 counties of Ohio, Kentucky and West Virginia will be served from this office. Mr. Gehring has been connected with the company since 1906 and has been manager of the Cleveland district for a long time.

K. C. ZONSIUS, branch manager of the Goodyear Tire & Rubber Company at Peoria, Ill., since May, 1929, has been appointed assistant manager of the advertising department, succeeding J. A. ROBERTSON, who resigned to re-enter the advertising business in Chicago. Mr. Zonsius has been with Goodyear since 1917, except for a period of service with the army. He has been succeeded at Peoria by V. Y. BELL, assistant manager at Milwaukee, who has been with the company since August, 1924.

WILLIAM D. ZAHRT has been promoted to the position of assistant treasurer of the Firestone Tire & Rubber Company, succeeding HOMER A. CAMPBELL, who resigned because of ill health. Mr. Campbell had been with Firestone for the last 10 years, going there after relinquishing his place as city manager of Akron.

BURTON J. LEMON, of the United States Rubber Company, acted as a member of the committee on arrangements for the annual dinner of the Society of Automotive Engineers, held at the Hotel Pennsylvania, New York City, on January 8.

J. HAUVETTE MICHELIN, who acted as vice-president and general manager of the Michelin Tire Company, Milltown, N. J., for many years, recently sailed for France with his family. He will return, however, to take up residence at New Brunswick, N. J.

HARRY E. BERRIEN, treasurer, and N. S. CONOVER, assistant secretary of the Murray Rubber Company, Trenton, N. J., have resigned their positions with that organization.

PROMOTE OFFICIALS OF GENERAL TIRE & RUBBER

Promotion of A. B. Stiller, for 15 years advertising manager of the General Tire & Rubber Company, to the post of merchandising manager, and appointment of Col. John A. Kick as advertising manager, was recently announced.

Mr. Stiller, as advertising manager of the company since its organization in 1915, has been particularly successful in develop-

A. B. STILLER

ing the company's merchandising policies for its distinctive system of distribution.

Col. Kick recently became affiliated with General, having previously been with the B. F. Goodrich Company as sales promotion manager. Before that, he was in general sales work with the Western Electric Com-

J. A. KICK

pany, advertising manager of the Edison Appliance Company, of Chicago, and later had charge of the Chicago city territory for the *Saturday Evening Post*.

P. W. LITCHFIELD, president of the Goodyear Tire & Rubber Company, visited the Los Angeles factory of his company late last month. In a statement made there, he expressed his opinion that the upward trend in business and in tire sales, while gradual, was already under way. "General recovery is not far off," he said, "although it is possible that some interests have not yet reached their lowest point."

H. J. ZIMMERMAN, traffic manager for the B. F. Goodrich Company, has advised the regional advisory board for the Great Lakes area that rubber products shipments for the first quarter of 1931 would show a substantial increase over the corresponding period for 1930, but made it understood that no unprecedented upward trend should be anticipated. He also stated that in recent years car loadings for rubber commodities, as compared with truck loadings, maintained a ratio of 3 to 1, but lately that ratio has been reduced. He predicted the time would come when truck and freight car loadings would be operating on an even basis.

C. P. WERNER, former office manager of the New York branch of the Pennsylvania Rubber Company, has been appointed eastern district credit manager. J. N. AVERITT, former Chicago branch office manager, has been named western district manager, and R. P. DURDIN has been advanced from office manager of the Atlanta branch to southern district credit manager.

HENRY R. HURD, advertising manager of the Kelly-Springfield Tire Company, left that position on January 1 to join Hommann, Tarcher & Sheldon, New York City advertising agency which will handle the Kelly-Springfield tire advertising from next month on. Mr. Hurd had been with the tire company 13 years. His duties will be taken over by E. J. LANGHAM as a part of his new position as manager of the sales promotion department. Mr. Langham, who entered the service of the company in 1924, has been a member of the truck tire sales division for the past four years.

J. F. MCCABE, formerly with the New Orleans office of the United States Rubber Company, has joined the United Motors Service in the same city. The United Motors Service has taken over the exclusive line of United States tires to round out its complete service to motorists, and Mr. McCabe will have charge of that department.

S. B. ROBERTSON, vice-president and general manager of the Pacific Goodrich Rubber Company, returned to Los Angeles on December 23 after a visit to the Akron offices of the parent company.

Rubber News Around the World

GOODYEAR OF ARGENTINA PLANT OPENS NEXT MONTH

Early in February the Goodyear tire and tube plant at Hurlingham, near Buenos Aires, will be formally opened, and C. Slusser, vice-president and factory manager of the Goodyear Tire & Rubber Company, and A. G. Cameron, vice-president of the Goodyear Tire & Rubber Export Company, have already left Akron for Buenos Aires to participate in the inaugural ceremonies.

This will be Mr. Slusser's first trip to Argentina, but Mr. Cameron visited that country in 1923. Both men have seen many years of service with Goodyear. Mr. Slusser joined the company in 1911 and has been instrumental in organizing production in the company's plants in America and abroad to a high point of efficiency. Mr. Cameron joined the company in 1913 and today is head of a foreign sales and distributing system that covers every country in the world with the exception of Russia.

The Argentina company was organized following a visit made to the South American republic in the fall of 1929 by P. W. Litchfield, president of Goodyear, who indicated at that time that he firmly believed Goodyear should increase its overseas tire and tube building output. Construction of the Argentina plant was started last July. The capacity will be 1,000 tires and 1,000 tubes daily, and about 400 people will be employed. Actual production is scheduled to begin immediately following the dedication.

BRITISH BILL PROVIDES RUBBER RESEARCH FUND

The text was issued on December 11 of a bill to provide for the collection of a contribution by rubber manufacturers of Great Britain and Northern Ireland to the funds of the Research Association of British Rubber and Tyre Manufacturers and for other purposes therewith.

The object of this bill is to ensure the continuance and development of scientific and industrial research into the problems arising in the manufacture of rubber and to place the Research Association upon a sound basis comparable with that of the Rubber Research Institute of Malaya recently established to provide for the scientific needs of the plantation rubber industry.

The proposals in the present bill are based upon the Cotton Industry Act, 1923, and involve the payment of a contribution by all rubber manufacturers in the United Kingdom and Northern Ireland of a sum not exceeding one twenty-fifth of a penny per pound in respect of all rubber used in their process of manufacture either as such or in the form of latex.

The operation of the bill is limited to five years, and the contributions to an average sum of £15,000 per annum.

Expect High India Tyre Profit

The London *Daily Mail* states that promising reports are current with regard to the India Tyre & Rubber Company (Great Britain), Ltd., and that it is likely that the 1930 profits of the company were substantially larger than those of 1929, which amounted to £130,426, or approximately $633,875. It is also reported that the company will increase its dividend payments. The financial year of the company ended December 31, but its report will not be issued until the latter part of February.

Seeks American Agency

The New Method Tyre Repair Company, 33 Buitengracht street, Cape Town, South Africa, desires to hear from American manufacturers who wish to appoint an agent in that country for their products. This firm is specializing in tire retreading, tube repairing, tennis shoe re-soling, and the repairing of water bottles and other rubber items. They particularly desire camelback for retreading purposes and would be glad to receive price lists and catalogues from the various suppliers of this commodity.

DUNLOP RUBBER COMPANY OPENS GARMENT DIVISION

The Dunlop Rubber Co., of England, has now entered the apparel trade and has introduced a range of waterproof and weatherproof coats. The garments are claimed to be new in quality, design, and cut, and are guaranteed unfadeable, the fabrics having been tested 80 hours in continuous sunshine. The proofing is by an exclusive process, and all garments are fully guaranteed. They are manufactured by the firm's garment division in Manchester.

Dunlop has for some time operated the Dela Rubber Co., a subsidiary specializing in rubber clothing, and, although successful, it was decided to establish a garment division of the parent company in order that the valuable name could be used.

KUNO SCHRAGIN, inventor of Berlin, Germany, arrived in Akron last month for the purpose of discussing his developments for strengthening tire fabrics and for producing puncture-proof tires with local manufacturers.

Canada Leads in Exports of Footwear to United Kingdom

The annual statistics of the Unitel Kingdom for the calendar year 1929 again place Canada first among the external sources of supply of rubber footwear to this country. For that year the heading "rubber boots and shoes" is separated into "rubber boots" and "rubber shoes, overshoes and goloshes." In dozens of pairs the total for both of these commodities is 1,045,769 valued at £1,660,948. The princinpal participants in this trade are: Canada, 238,232 dozen pairs (£669,747); the United States, 115,346 (£390,419); Belgium, 386,259 (£204,685); Germany, 148,195 (£145,651); and France, 78,830 dozen pairs (£89,194). Germany and Belgium both show marked increases over the 1928 figures of 84,826 dozen pairs (£91,823) and 155,791 dozen pairs (£86,009) respectively, while the United States has experienced a very decided decline from the 1928 figures of 128,589 dozen pairs (£512,980). Canada has also receded somewhat from the previous year's record of 233,803 dozen pairs (£702,288).

Sport Shoe Sales Gain

Canvas shoes with rubber soles are likely to find an expanding market in this country as there has been a marked increase in indoor winter games such as badminton. One frequent complaint among players is that the shoes offered on this market do not stand wear and tear for more than three months, and quite often less than two months. One firm has met this complaint by giving a four months' guarantee to every pair of tennis or badminton shoes sold. Retail prices range approximately from 4s. (97 cents) for a mediocre article to 10s. 9d. ($2.61) for a shoe that is recognized as about the best on this market and is in wide demand among badminton players. One wholesaler reports that in very cheap canvas shoes with rubber crepe soles he has received quotations from a United Kingdom agent of a Japanese firm at 18s. 6d. ($4.50) per dozen delivered.

Boots Popular With Women

The heavy and very prevalent rains of the winter season make rubber boots (Wellingtons) popular among women. Cuban- and Louis-heeled shoes are the styles most in demand. Opinions in the trade vary as to the Louis heel. While admitting that it had a smarter appearance than the Cuban, there was some impression that it did not wear as well as the other, with a slight recision of demand. The smartest rubber boot of this style, it was stated, was imported from Sweden, while English manufacturers were able to supply at competitive prices the less-fancy wear. Canadian boots were also well represented. Cheap low-grade boots were reported to be coming in from Japan at prices averaging 39s. ($9.48) per dozen delivered wholesale for misses' wear. Retail prices for Louis-heeled boots average about 17s. ($4.13) to 18s. ($4.38)), and for those with Cuban heels 14s. ($3.40) to 15s. ($3.65).

Rubber Goods and Specialties

Giant Grip Rubber Calks

The Giant Grip Manufacturing Company, Oshkosh, Wis., is making flexible rubber bar pads and rubber heel calks for Giant Grip drive calk horseshoes. These flexible rubber bar pads can be stretched, contracted or twisted to fit the spread of the heel after the horse has been shoed, and they can be

fitted without taking into consideration the size of the rubber bar pad. They are interchangeable in drive calk shoes and as easily removed as steel drive calks. The flexible feature holds the pad securely in the shoe. The rubber heel calks are especially effective on hard oily pavements or slippery roads.

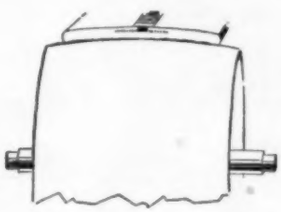
General Retain-air Tube

The new General Retainer-air inner tube has just been announced as one of the new products of the General Tire & Rubber Company, Akron, O. While this is a development of the puncture-seal tube, the manufacturer points out that its ability to

retain air is more important than its puncture-proof feature. It maintains air pressure evenly, according to the maker, for it loses less air in a month than the average tire loses in a week. It slows down tire tread wear because it maintains the tire in a proper position. It reduces inner carcass breaks and minimizes the danger of blowouts, it is claimed, and gives tire mileage averaging about 20 per cent over the ordinary tube.

Cincinnatus Duoflex Belt

A new construction in transmission belting is announced by the Cincinnati Rubber Manufacturing Company, Cincinnati, O., in its Cincinnatus Duoflex belt. Being flexible both crosswise and lengthwise, this belt is designed to give greater pulley contact and thus to deliver more horsepower. It is built to fit all kinds of pulleys, flat or heavy crowned, large or small, with a gear like grip. The reason for the close pulley hug is the automobile tire cord insert, shown in the illustration above, which gives crosswise flexibility and exceptional adhesion under the seam. Where many belts slip and strain, this type is claimed to operate with slack, delivering greater horsepower, longer service and life with less fastener trouble. Its action over a crowned pulley is shown below. Its flexibility is combined with great



strength from its hard duck body. The Cincinnati Rubber Manufacturing Company recently introduced this new belting after extensive factory experimentation and scientific tests, and it is already meeting with a favorable market reception.

Balloons for Mardi Gras

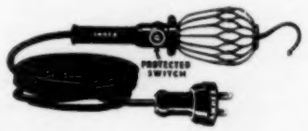
Air-inflated figures 14 feet high have been prepared by the Goodyear Tire & Rubber Company in its aeronautics department for the Mardi Gras celebration at New Orleans, La. Goodyear has for the past few years prepared similar inflated figures of comic strip characters for parades by R. H. Macy & Company and other department stores. Those for the New Orleans fete will be chiefly animal figures.

Tire Initialing Kit

The Goodyear Tire & Rubber Company, Akron, O., is now marketing a tire initialing kit by means of which customers' initials may be placed on the sides of the tires purchased. Each kit contains 75 of each letter of the alphabet, enough to initial five tires on more than 100 cars. The letters are white for black sidewalls and black for white sidewalls. About 10 minutes' time is all that is needed to do the initialing job.

Ampex Rubber Service Light

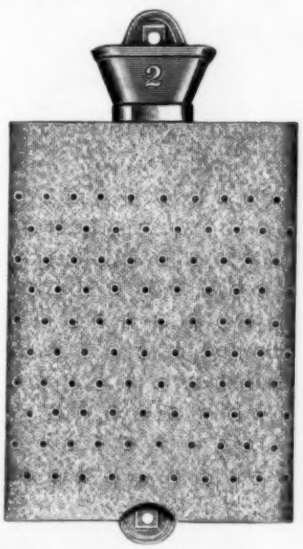
A rubber service light with a switch has been developed by Ampex, Inc., 195 Morgan Avenue, Brooklyn, N. Y. The switch push knobs are protected by rugged cylindrical rubber portions to shield the switch mechanism. The design is neat and the entire set of sturdy construction. The service cord is



made durable and of substantial diameter, and the service light handle and handle cap are of generous dimensions and made of a tough rubber compound. The light is furnished with tinned lamp guard and hook with cord lengths of 10 feet, 15 feet and 20 feet.

Kumfy Water Bottle Covers

Under the name of Kumfy covers, the Faultless Rubber Company, Ashland, O., is offering an item which it claims will completely solve the water bottle problem of giving enough heat, but not too much, and giving it for a long time. Made of perforated sponge rubber, these covers act as a heat insulator, preventing quick cooling and keeping the bottle warm for a long time.



The bottle is filled with water hotter than would ordinarily be used (up to 180 degrees Fahrenheit) and, with the cover, is just right for use. Otherwise, the bottle would have to be wrapped in a towel, which is inconvenient and unsafe. The covers can be used for dry heat or moist heat and for cold compresses. They are made in two sizes and in assorted colors—natural, red, orchid, blue, green—and can be sterilized in boiling water.

Current Crude Rubber Items

FORD INTERESTS DENY TROUBLE ON PLANTATION

Newspaper reports last month of trouble in the Ford rubber growing concession on the Amazon, making necessary the flight of a rescue plane to that area, were denied in full by Kristian Orbeg, head of the Ford Motor Company interests for all Brazil. A news agency, however, has received a report of certain minor difficulties due to the Ford representatives threatening the eviction of 150 poor laborers living in huts encroaching on land purchased by the Ford organization.

The land is located in the municipality of Prainha, State of Para, and adjoins the Ford rubber land granted by the government. The dwellers have petitioned the provisional governor of Para to prevent the eviction, claiming that the land was bought in an irregular fashion from three illiterate orphans and a temporary injunction has been granted.

Sao Paulo authorities believe the plane flights were due to the desire of Mr. Ford to have a representative from Detroit attending the coming investigation on the terms and details of the Ford leases granted under the old government. Confirmation of this is not obtainable in Sao Paulo, but it is believed to be part of a plan to investigate all of the previous government's contracts.

Exchange Differentials

The adjustment committee of the Rubber Exchange of New York has fixed differentials between the various grades of Hevea plantation rubber which shall prevail on all deliveries against "A" contracts during January as follows: Off quality first latex crepe, 0.2 cent per pound; good f.a.q. ribbed smoked sheets, 0.4 cent per pound; ordinary f.a.q. ribbed smoked sheets, 0.65 cent per pound.

Exchange Pays Bonus

The Rubber Exchange of New York last month paid a bonus to its employes equivalent to 5 per cent of their annual salaries.

Another Estate Curtails

Sumatra cables state that the Societe Financiers has decided to reduce the production of rubber in Batavia in 1931 by 20 per cent. It will also discontinue tapping the low producing areas.

ESTATE TO REDUCE CROP BY 1,000,000 POUNDS

In a circular to shareholders, the directors of the United Sua Betong Rubber Estates, Ltd., state that it has been decided to put approximately 2,500 acres out of tapping, while on the remainder of the mature area a policy of selective tapping will be followed.

It is estimated that as a result of these measures a reduction at the rate of about 1,000,000 lbs. per annum will be effected in normal output.

It has been decided not to declare an interim dividend. For 1929 an interim distribution of 5 per cent was paid and a final of 10 per cent.

NOVEMBER ESTATE OUTPUT TOTALED 36,587 TONS

Production of crude rubber on estates of more than 100 acres in the Far East during November totaled 21,673 tons, according to cables to the Rubber Exchange. Production on estates under 100 acres totaled 14,914 tons during the month.

Dealers' stocks in the Far East (excluding Singapore and Penang) totaled 17,974 tons on November 30.

NEW HOME IS PLANNED FOR RUBBER EXCHANGE

Officials of New York's leading commodity exchanges, including the Rubber Exchange of New York, Inc., are taking definite steps to bring about the construction in the Wall Street district of a new large building which is designed to house virtually all of the local markets in which staples are traded. Under present prices, the cost of the enterprise may range from $7,500,000 to $15,000,000, and construction may begin this spring if the plan meets with the approval of the exchange memberships.

It is understood that a conference held recently toward this purpose was attended by F. R. Henderson, former president of the Rubber Exchange, and by several prominent commodity exchange executives. Among the other institutions which are expected to participate in the joint building project are the New York Cotton Exchange, the New York Coffee and Sugar Exchange, the National Metal Exchange, the National Raw Silk Exchange, and the New York Burlap and Jute Exchange.

DUTCH INDIES OUTPUT HIGHER FOR NOVEMBER

Shipments of crude rubber from the Dutch East Indies for November totaled 20,053 tons, against 19,533 tons shipped in October, according to cables to the Rubber Exchange of New York.

East Coast Sumatra was the largest shipper in November with a total of 6,504 tons, against 7,068 tons in October, Java and Modoera ranking second with 5,420 tons last month, as compared with 6,011 tons for October.

COMPANY IS FORMED TO SPECULATE IN RUBBER

The Co-operation Rubber Corporation, Ltd., has been formed in England, according to its prospectus, mainly to speculate in crude rubber. The corporation has a capital of unlimited amount in 2s. shares, for which the outside public may subscribe at par plus 1d. entrance fee, with a minimum limit of 100 shares and a maximum of 2,000.

The directors are William Alfred Lack, a director of two rubber companies, and Walter Cecil Norfolk, an East India merchant. The corporation itself will act as a clearing house for stockholders who wish to buy and sell and proposes to allocate an unnamed sum from each year's revenue as a fund for the repurchase of shares at the discretion of the directors. Any funds not required for the purchase and sale of rubber are to be used for an investment trust business.

Closing Prices on Rubber Exchange of New York, Inc.

FROM DECEMBER 18, 1930, TO JANUARY 3, 1931

		Spot	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Sales
No. 1 Standard Contract of 10 Tons															
Dec.	18	8.93	8.90	9.02	9.15	9.22	9.29	9.39	9.50	9.55	9.60	9.70	9.80	——	67
	19	8.65	8.65	8.73	8.80	[illegible]	8.95	9.07	9.20	9.28	9.35	9.45	9.55	——	47
	20	8.43	8.55	8.60	8.75	8.85	8.95	9.00	9.10	9.23	9.35	9.45	9.55	——	32
	22	8.45	8.35	8.47	8.59	8.70	8.80	8.88	8.95	9.05	9.15	9.25	9.35	——	80
	23	8.43	8.55	8.61	8.67	8.76	8.85	8.92	9.00	9.09	9.18	9.28	9.38	——	13
	24	8.56	8.55	8.63	8.72	8.81	8.90	8.98	9.05	9.14	9.23	9.45	9.55	——	2
	26	8.48	8.56	8.64	8.72	8.79	8.86	8.95	9.05	9.15	9.25	9.35	9.45	——	31
	27	8.43	8.55	8.60	8.65	8.75	8.85	8.94	9.02	9.13	9.25	9.35	9.45	——	15
	29	8.37	8.35	8.40	8.57	8.66	8.75	8.82	8.90	9.02	9.15	9.30	9.40	——	1
	30	8.43	8.45	8.52	8.60	8.70	8.80	8.87	8.95	9.05	9.15	9.25	9.35	——	40
	31	8.43	8.45	8.55	8.65	8.72	8.80	8.90	9.00	9.10	9.20	9.30	9.40	——	16
Jan.	2	8.25	8.25	8.33	8.42	8.49	8.57	8.66	8.75	8.85	8.95	9.08	9.20	9.35	38
	3	8.31	8.40	8.50	8.60	8.68	8.75	8.85	8.95	9.05	9.15	9.28	9.41	9.54	18
"A" Contract of 2½ Tons															
Dec.	18	——	8.80	8.90	9.10	9.10	9.20	9.20	9.30	9.40	9.60	9.60	9.70	——	97
	19	——	8.50	8.60	8.70	8.80	8.80	8.90	9.00	9.10	9.30	9.40	9.50	——	43
	20	——	8.50	8.40	8.60	8.70	8.80	8.90	9.10	9.20	9.30	9.40	9.50	——	82
	22	——	8.20	8.30	8.50	8.60	8.70	8.70	8.80	8.90	9.10	9.20	9.30	——	76
	23	——	8.40	8.50	8.60	8.70	8.80	8.80	8.90	9.00	9.10	9.20	9.30	——	181
	24	——	8.50	8.50	8.60	8.70	8.80	8.90	9.00	9.10	9.20	9.30	9.40	——	2
	26	——	8.50	8.50	8.60	8.70	8.80	8.90	9.00	9.10	9.20	9.30	9.40	——	171
	27	——	8.50	8.50	8.60	8.70	8.80	8.90	9.00	9.10	9.20	9.30	9.40	——	144
	29	——	8.30	8.30	8.50	8.50	8.60	8.70	8.80	8.90	9.00	9.10	9.20	——	21
	30	——	8.40	8.40	8.50	8.60	8.70	8.80	8.90	9.00	9.10	9.20	9.30	——	134
	31	——	8.40	8.50	8.60	8.60	8.70	8.80	8.90	9.00	9.00	9.10	9.20	——	144
Jan.	2	——	8.20	8.30	8.30	8.40	8.50	8.60	8.70	8.80	8.80	9.00	9.10	9.20	59
	3	——	8.30	8.40	8.40	8.50	8.60	8.70	8.80	8.90	9.10	9.20	9.30	9.40	4

PACIFIC GOODRICH SALES EXCEEDING PRODUCTION

S. B. Robertson, vice-president and general manager of the Pacific Goodrich Rubber Company, subsidiary of the B. F. Goodrich Company, states that the company would enter 1931 with inventories of finished products and the rate of production in a more balanced relation to demand than prevailed at the beginning of the current year.

Current sales of the Pacific Goodrich Company are in excess of production, according to Mr. Robertson. In fact, the official said, tire manufacturing companies in general have been liquidating finished inventories by reducing production.

This policy of general liquidation of finished inventories for the industry was necessary, he points out, because of decreased sales resulting from a lower replacement demand of tires. Segregated production statistics of the Pacific Coast, which comprises the eleven Western states, are unavailable, but for the entire country these figures indicate declining inventories and output as emphasized by Mr. Robertson.

Mr. Robertson states that prospects for 1931 are for stimulated tire sales, principally from replacement demand. While the Los Angeles plant of Pacific Goodrich Company is not operating at capacity of 6,000 tubes daily, the present output of the factory will be increased near the end of this year.

Present finished inventories of the company are at the lowest point in years, he said, and this factor will justify proposed increased production schedules. Raw material inventories are being maintained at a low figure, consequently the charge-off because of declining rubber market prices will not be as large this year as in 1929.

Weight-Volume Chart

The Binney & Smith Company, 41 East 42nd street, New York City, has recently issued a nomographic weight-volume percentage conversion chart. This chart is convenient for determining the volume percentages of ingredients in a rubber or similar mix, corresponding to their weight percentage, or vice versa. Copies will be sent upon request to any one who will write to that company.

Jenkins Bros. Payroll Stolen

Three armed bandits escaped with a $1,000 payroll after holding up the paymaster of the Jenkins Brothers Rubber Division in the office of the company at Elizabeth, N. J., on December 19. The robbers escaped in their automobile, despite a chase by employes of the company.

Stanley Doggett

Stanley Doggett, president of the chemical manufacturing firm of Stanley Doggett, Inc., 99 John Street, New York City, was killed December 29 when he fell while ascending the steps of the Lackawanna Railroad station in East Orange, N. J. The firm of Stanley Doggett, Inc., established in 1878, has long been a manufacturer and importer of dry colors and pigments.

Philip C. Fuller

Philip C. Fuller, former chief engineer of the B. F. Goodrich Company, died at his daughter's home on December 21, following a lengthy illness. He was 83 years old.

Mr. Fuller came to Akron in 1874 when he relinquished a position with the A. G. & W. railroad to accept a post as engineer for the rubber company. His duties included those of being engineer, machinist and assistant in experimental work, in addition to aiding in preparing shipments and checking rubber shipments to the plant. During his 44 years of service for the company, Mr. Fuller's duties gradually decreased until he became chief engineer, which position he held until 1918 when he was pensioned.

Form Tire Patch Firm

The Twentieth Century Manufacturing Company, Inc., Modlothian, Tex., has been organized with $20,000 capital to manufacture automobile tire patches. John A. Monroe, Stanley Monroe and Mrs. Ledonia Monroe are the incorporators.

Chicago Tire Expands Line

The Chicago Tire & Reliner Company, 1925 Blackwell Street, Chicago, Ill., which has manufactured skived shoes and patches for many years, is now entering into the manufacture of finished tire repair materials of all types. The company will specialize in plaster patch assortments.

Patent For Sale

Recent patent on article developed to supply urgent public demand. Suited to rubber construction. Manufacturers interested in new product write to:

C. R. OTTO
Edmond, Okla.

COLIN MACBETH PRAISES U. S. CENTRALIZATION

Centralization of the manufacturing activities in Detroit by the United States Rubber Company was a great step ahead from a standpoint of manufacturing economy and engineering, according to Colin Macbeth, international authority on tire engineering after a recent visit to the tire department of the United States Rubber Company and an inspection of its big Detroit plant. Mr. Macbeth inspected many of the large rubber plants of the country before returning to his home in England.

"Centralization," said Mr. Macbeth, "enables a company to concentrate its activities in one spot, co-ordinate its production with engineering and thus bring the best efforts of its development to bear at once upon its product. This has been responsible for much of the progress made in the last twelve months. For example, the moving production unit employed by the United States Rubber Company in manufacture of the smaller tires has effected great economies and made for greater uniformity of product."

Mr. Macbeth was particularly impressed with the cleanliness noted at the Detroit plant. "Cleanliness and efficiency could be noted throughout the entire factory," he said.

General adoption of the drop center rim is the only major change that the British expert expects to see in the near future.

Goodyear Sues for Trade-Mark

The Goodyear Tire & Rubber Company has taken an appeal from the decision recently handed down by the Government Patent Office favoring the C. Kenyon Company, Brooklyn, N. Y., in respect to the right to the "double wings" trade mark. The Brooklyn tire manufacturer contended that a prior claim to that particular trade mark was of record in the Patent Office.

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LATE MARKET PRICES

RUBBER—COTTONS AND FABRICS—CHEMICALS

NEW YORK, JANUARY 6, 1931

RUBBER

Crude

DURING the year of 1930, the average closing price for smoked ribbed sheets on the New York outside market was 11.98 cents a pound, the lowest in history for the commodity. This compares with the 1929 average of 20.55 cents and with the previous lowest averages of 16.36 cents in 1921 and 17.50 cents in 1922, following which the British government adopted restrictive measures under the Stevenson Act.

After closing on December 31, 1929, at 16⅛ cents a pound, crude rubber opened the year of 1930 a half-cent lower at 15⅞ cents. Following a month of narrow fluctuations, the commodity reached a high of 16½ cents on February 19, 21 and 24. From that time there was a fairly steady decline until the record low of 7½ cents was reached on September 30 and October 1 and 2. The price has subsequently risen to 9⅝ cents, but closed on December 31 a full cent below that figure. February was the best month for the commodity, with an average daily closing price of 15.85 cents, while October was the poorest, with an average of 8.20 cents.

Prices quoted on the New York outside market on January 6 were as follows:

Plantations—

Ribbed Smoked Sheets—			
Spot-Jan.	.08¼	@	.08⅜
Jan.-Mar.	.08⅜	@	.08½
Apr.-June	.08½	@	.08⅝
First Latex, crepe spot	.08¼	@	.08⅜
Amber Crepe, No. 2	.07⅝	@	.07⅞
Amber Crepe, No. 3	.07½	@	.07⅝
Amber Crepe, No. 4	.07	@	.07⅛
Brown Crepe, Clean thin	.07⅜	@	.07⅝
Brown Crepe, specky	.07	@	.07⅛
Liquid Latex, per gal.	.75	@	.85

Paras—

Up-river Fine	.12	@	—
Up-river Medium	Nominal		
Up-river Coarse	.07	@	.08
Acre Bolivian, fine	.12¼	@	—
Caucho Ball, Upper	.07	@	.08
Islands, fine	Nominal		

Centrals—

Central, scrap	—	@	.07
Esmeraldas	—	@	.07

Balata—

Block, Colombia	Nominal		
Block, Ciudad	.34	@	.35

LONDON MARKET

Standard Ribbed Smoked Sheets—Buyers			
Spot-Jan.	4⅛	@	4¼d
Jan.-Mar.		@	4¼d
Apr.-June		@	4⅜d

SINGAPORE MARKET

Standard Ribbed Smoked Sheets—Sellers			
Spot		@	3¾d

Scrap

Acting in sympathy with the quotations for crude rubber, the prices for the various grades of rubber scrap have declined during the year just past to the lowest levels on record. Dealers are hoping for an upturn in business and prices by or before the start of spring. Late quotations, however, remain as follows:

(Prices to Consumer)

Auto tire peelings	ton 23.50	@	25.00
Mixed auto	ton 12.00	@	12.50
Bicycle tires	ton 9.00	@	10.00
Clean solid truck tires	ton 24.50	@	26.00
Boots and shoes	cwt. 1.10	@	1.25
Arctics, untrimmed	cwt. .90	@	1.00
Inner tubes, No. 1	lb. .05⅛	@	.05½
Inner tubes, No. 2, compounded	lb. .02⅛	@	.02¼
Inner Tubes, Red	lb. .02¼	@	.02⅝
Air Brake Hose	ton 10.00	@	12.00
Rubber Hose	ton 9.00	@	10.00

Reclaimed

Production and consumption of reclaimed rubber during 1930 were well under the totals for 1929, and the ratio of reclaim used in proportion to crude rubber also declined. Accurate totals for the year can not be calculated, however, until the publication of final reports by the Rubber Manufacturers Association. Latest prices follow:

High Tensile				
Super-Reclaim Black	lb.	.08⅛	@	.08¾
High Tensile Red	lb.	.08¼	@	.08½
Shoe				
Unwashed	lb.	.06	@	.06¼
Washed	lb.	.08	@	.08¼
Tube				
No. 1 (Floating)	lb.	.08⅛	@	.08¾
No. 2 (Compounded)	lb.	.07½	@	.07¾
Tires				
Black	lb.	.05¾	@	.06
Black, selected tires	lb.	.06	@	.06½
Dark Gray	lb.	.07	@	.07½
Light Gray	lb.	.07¾	@	.08
White	lb.	.08¾	@	.09
Truck, Heavy Gravity	lb.	.06	@	.06¼
Truck, Light Gravity	lb.	.06¼	@	.06½
Miscellaneous				
Mechanical blends	lb.	.05	@	.05½

COTTON and FABRICS

Cotton

DURING the year of 1930, the average closing price for spot middling uplands at New York was 13.57 cents a pound. This is the lowest average for several years past and compares with yearly averages in 1929 of 19.03 cents, in 1928 of 19.97 cents and in 1927 of 17.49 cents.

The price for the commodity has declined steadily since January, and the lowest monthly average was reached in December at 10.02 cents a pound. The lowest closing price for cotton was reached on December 15 at 9.45 cents. Since the turn of the year, there has been a slight rise in quotations, which may continue.

The high, low and closing prices on the New York Cotton Exchange on January 6 were as follows:

	High	Low	Close	Close
		Jan. 6		Dec. 17
Jan.	10.07	9.82	9.94	9.84
Mar.	10.29	10.01	10.14	10.11
May	10.57	10.28	10.41	——

Tire Fabrics

Consumption of cotton fabrics in the tire industry last year exceeded 190,000,000 pounds, but was, of course, far below the 1929 total of 261,030,817 pounds. Prices for tire fabrics have declined steadily through the year in sympathy with the falling quotations for raw cotton. Latest prices for the various grades of tire fabric were as follows:

CORD				
Peeler, carded, 22/4/3	lb.	.34½	@	.34¾
Peeler, carded, 23/5/3	lb.	.33	@	.33¼
Peeler, carded, 13/3/3	lb.	.30½	@	.30¾
Peeler, carded, 15/3/3	lb.	.31	@	.31¼
Egyptian, carded, 23/5/3	lb.	.43	@	.43½
Egyptian, combed, 23/5/3	lb.	.47	@	.47½
CHAFERS				
Carded, American, 8 oz.	lb.	.26½	@	.27
Carded, American, 10 oz.	lb.	.26	@	.26½
Carded, American, 12 oz.	lb.	.25½	@	.26¼
Carded, American, 14 oz.	lb.	.25	@	.26
LENO BREAKER				
Carded, American, 8¼ oz.	lb.	.26	@	.32
Carded, American, 10¼ oz.	lb.	.26	@	.32
SQUARE WOVEN				
Carded, American, 17¼ oz. 23-11 ply	lb.	.33	@	.33½
Carded, American, 17¼ oz. 10-ply	lb.	.25	@	.25½

Sheetings

The sheetings market closed the fortnight fractionally lower and close to the bottom levels for the past two or three years. The latest quotations, as reported by the Textile Brokers Association, were as follows:

40-inch, 2.50-yard	yd.	—	@	.08
40-inch, 2.85-yard	yd.	—	@	.07
40-inch, 3.15-yard	yd.	—	@	.06½
40-inch, 3.60-yard	yd.	—	@	.06¼
40-inch, 3.75-yard	yd.	—	@	.05¾
40-inch, 4.25-yard	yd.	—	@	.05¼

Ducks

Hose and belting ducks fell in line with other grades during the fortnight and dropped to the lowest levels in several years. The market, however, continued to be only fairly active. The latest quotations follow:

Belting and Hose	lb.	—	@	.24
Enameling	lb.	.22	@	.24
Single filling	lb.	.10¾	@	.12
Double filling	lb.	.13	@	.14

CHEMICALS

THE fortnight was featured by the announcement on December 26 of another half-cent reduction in the price quotations on carbon black. Due to heavy overproduction and the consequent accumulation of large warehouse stocks, this important compounding material has dropped three cents in price in the course of the past year and is today selling close to the actual cost of production. Other changes in price in the more important rubber chemicals and compounding ingredients have been only slight during the last twelve months, although sales have fallen off in proportion to the lessened rate of factory production.

ACCELERATORS

Organic			
A-1	lb.	.24 @	.27
A-5-10	lb.	.33 @	.36
A-7	lb.	.55 @	.59
A-11	lb.	.62 @	.66
A-16	lb.	.57 @	.61
A-19	lb.	.58 @	.62
A-20	lb.	.64 @	.68
A-32	lb.	.80 @	.95
Aldehyde ammonia, crystals	lb.	.65 @	.70
Aniline oil, drums, f.o.b. works	lb.	.15 @	.16
Captax	lb		
Crylene	lb.	.55 @	.65
paste	lb.	.45 @	.55
Di-Ortho-Tolyguanidine	lb.	.42 @	.44½
Diphenylguanidine	lb.	.30 @	.32½
Ethylidene aniline	lb.	.45 @	.47½
Formaldehyde aniline	lb.	.37½@	.40
Heptene	lb.	.40 @	—
Hexamethylene-tetramine	lb.	.58½@	.61
Lithex	lb.	.18 @	.20
Methylenedianiline	lb.	.37½@	.40
Monex	lb.	3.25 @	--
Oxynone	lb.	.68 @	.80
Phenex	lb.	.75 @	—
Pipsol	lb.	4.30 @	4.50
R & H 40	lb.	.40 @	.42½
R & H 50	lb.	.40 @	.42½
R & H 397	lb.	.75 @	.77½
R-2	lb.	1.95 @	2.15
Safex	lb.	1.20 @	1.25
SPDX	lb.	.75 @	—
Super-Sulphur No. 1	lb.		
No. 2	lb.		
Tensilac, No. 39	lb.	.40 @	.42½
Tensilac, No. 41	lb.	.50 @	.52½
Thermio F	lb.	.50 @	.55
Thiocarbanilid, drums	lb.	.25½@	.28½
Trimene	lb.	.75 @	—
base	lb.	1.20 @	—
Triphenylguanidine	lb.	.58 @	.62½
Tuads	lb.		
Ureka	lb.	.75 @	1.00
Vulcanex	lb.		
Vulcone	lb.		
Vulcanol	lb.		
Z-88-P	lb.	.50 @	.60
Zimate	lb.		
Inorganic			
Lead, sublimed blue	lb.	.08¼@	—
Lead, white	lb.	.08½@	.08¾
Litharge, domestic	lb.	.07¾@	—
Magnesia, calcined, light	per 100 lb.	5.35 @	5.45
heavy	per 100 lb.	3.65 @	3.75

COLORS

Blacks (See Compounding Materials)			
Blues			
Prussian	lb.	.35 @	.36
Ultramarine	lb.	.06 @	.32
Browns			
Sienna, Italian	lb.	.05½@	.12½
Umber, Turkey	lb.	.04½@	.07
Greens			
Chrome, light	lb.	.30 @	.32
medium	lb.	.31 @	.33
dark	lb.	.34 @	.36
Chromium Oxide, bbl.	lb.	.34½@	.35½
Reds			
Antimony crimson, 15/17	lb.	.40 @	.44
sulfur, free	lb.	.56 @	.66
golden, 15/17 F.S.	lb.	.20 @	.25
Indian English	lb.	.08 @	.11
Domestic (Maroon)	lb.	.11 @	—
Oximony	lb.	.13¼@	—
Red oxide, pure	lb.	.10 @	.12
Smith's 444 Crimson f.o.b. Springfield	lb.	.08¾@	.10
Rub-Er-Red, f.o.b. Easton	lb.	.08¾@	—
Venetian red	lb.	.08 @	.06
Vermillion, quicksilver. English	lb.	1.75 @	1.80
Whites			
Lithopone, Akcolith	lb.	.05 3/5@	.06
Lithopone, Albalith	lb.	.05¼@	.05¾
Lithopone, Azolith	lb.	.05¼@	.05¾
Lithopone, Vanolith	lb.	.05¾@	—
Titanium oxide	lb.	.21 @	—
Titanox B, f.o.b. St. Louis.	lb.	.06½@	.07
Titanox C, f.o.b. St. Louis.	lb.	.07 @	.07½
Zinc Oxide—American Process			
American Azo:			
ZZZ (lead free)	lb.	.06½@	.07
ZZ (leaded)	lb.	.06⅝@	.06⅞
Horsehead Brand:			
Special	lb.	.07 @	.07½
XX Green	lb.	.07 @	.07½
XX Red, lead free	lb.	.06½@	.07
Kadox, black label	lb.	.10⅜@	.10⅞
blue label	lb.	.09⅜@	.09⅞
red label	lb.	.08 @	.08½
Zinc Oxide—French Process			
White seal	lb.	.11⅝@	.11⅞
Green seal	lb.	.10¾@	.10⅞
Red seal	lb.	.09¾@	.09⅞
Yellows			
Chrome	lb.	.16½@	.17
Ocher, French medium	lb.	.02 @	.03
domestic	lb.	.01⅝@	.02

COMPOUNDING MATERIALS

Aluminum Flake	ton	21.85 @	24.50
Ammonia carbonate, lump	lb.	.07½@	.07¾
Asbestine	ton	14.75 @	18.00
Barium carbonate	lb.	.03½@	.05
Barium Dust	lb.	.05 @	.06
Barytes southern off-color	ton	12.00 @	18.00
Western prime white	ton	23.00 @	—
imported	ton	27.00 @	36.00
Basofor	lb.	.04½@	—
Bentonite	lb.	.02 @	.03
Blacks			
Arrow "Aerfloted"	lb.	.04 @	.09
Bone Black	lb.	.06 @	.12½
Carbon, compressed	lb.	.03½@	.07½
Carbon, uncompressed	lb.	.03½@	.07½
Disperso, f.o.b. Louisiana	lb.	.03½@	—
Disperso, f.o.b. Texas	lb.	.036 @	—
Drop Black	lb.	.06 @	.14
Fumonex	lb.	.03½@	.07½
Excello, compressed	lb.	.05 @	.06
Gastex, f.o.b. Texas	lb.	.03½@	.05
Lamp Black	lb.	.10 @	.40
Micronex	lb.	.04 @	.09
Thermatomic-Thermax	lb.		
Flex	lb.		
P-33	lb.		
United carbon, fob Tex.	lb.	.04 @	.09
Velvetex carbon	lb.	.03 @	.06
Blanc fixe dry f.o.b. works	ton	75.00 @	90.00
Carrara filler	lb.	.01¾@	.02
Catalpo (fact.)	lb.	.02 @	—
Clay, Kaolin, domestic	ton	8.00 @	9.00
Aerfloted, Suprex	ton	8.00 @	20.00
Colloidal	lb.	.05 @	.08
Congaree c. l. f.o.b. mine	ton	9.00 @	—
Dark Blue Ridge	ton		
Dixie	ton		
Langford	ton		
Lexington	ton	10.00 @	22.00
Mineral Flour. c.l. f.o.b. mine	ton	20.00 @	23.00
Par	ton		
Tensulite		15.00 @	—
Glues, extra white	lb.	.22 @	.26
medium white	lb.	.20 @	.24
Magnesia, carbonate	lb.	.08¾@	.11
Mica, white water grnd.	lb.	.06 @	.08
Off color (biotite)	lb.	.05 @	.07
Rotten Stone (powdered)	lb.	.02 @	.05
Soapstone, powdered	ton	15.00 @	22.00
Starch, powdered	cwt.	3.62 @	3.92
Talc, domestic	ton	12.00 @	15.00
Pyrax A	ton		
Whiting, commercial	cwt.	— @	1.00
English cliffstone	cwt.	1.75 @	2.00
Quaker	ton		
Superfine	ton	10.00 @	12.00
Sussex	ton		
Witco	ton	20.00 @	—
Zinc Carbonate	lb.	.09¼@	.10¼
Zinc Stearate	lb.	.23 @	.24½

MINERAL RUBBER

Genasco (factory)	ton	50.00 @	52.00
Granulated M. R.	ton		
Hard Hydrocarbon	ton		
Paradura	ton	62.50 @	65.00
Parmr, solid	ton	28.00 @	48.00
Pioneer. MR, solid	ton	40.00 @	42.00
Pioneer-granulated	ton	50.00 @	52.00
R & H Hydro-Carbon	ton	27.05 @	29.00
Robertson, MR, solid	ton	34.00 @	80.00
M.R. (gran)	ton	38.00 @	80.00

SOFTENERS

Acids			
Nitric, 36 degrees	cwt.	5.00 @	5.25
Sulfuric, 66 degrees	cwt.	1.60 @	1.95
Tartaric, crystals	lb.	.33½@	.35
Acids, Fatty			
Laurex	lb.	.15 @	.16
Stearex	lb.	.13 @	.17
Stearic, double pressed	lb.	.17 @	.22
Alkalies			
Caustic soda, 76%	cwt.	3.76 @	3.91
Soda ash, 58% C.L.	cwt.	1.40 @	
Oils			
Corn, refined, bbls.	lb.	.08¾@	.10¼
Cottonseed, crude		.06⅛@	.07
Cycline	gal.	.27 @	.34
Degras (c.l. 100 bbls.)	lb.	.03¾@	—
Less c.l. (10-25 bbls.)	lb.	.04 @	—
Lots less than 10 bbls.	lb.	.04¼@	.04½
Fluxrite	lb.	.05½@	.06½
Palm Lagos	lb.	.05⅝@	.06
Niger	lb.	.05⅛@	.05¼
Para-Flux	gal.	.17 @	—
Petrolatum, white	lb.	.08 @	.08½
Pigmentaroil	gal.	.18 @	.23
Pine, steam distilled	gal.	.65 @	.70
destructively distilled	gal.	.54 @	.55
Witco Palm Oil	lb.	.11 @	—
Witco Softener (f.o.b. wks.)	lb.	.02 @	—
Resins and Pitches			
Pitch, Burgundy	lb.	.06½@	.07½
coal tar	gal.	.05½@	.06
pine, 200 lb. gr. wt. bbl.		7.00 @	—
Rosin, grade K, 280 lb. bbl.		— @	5.65
Pigmentar	gal.	.18 @	.23
Tar Retort, 50 gal.	bbl.	13.50 @	15.00
Solvents			
Acetone, pure	lb.	.11 @	.12
Alcohol, denatured, No. 1 bbls.	gal.	.40 @	.44
Benzol, 90%	gal.	.21 @	.23
Carbon, bisulphide	lb.	.05½@	.06¼
Carbon, tetrachloride	lb.	.06¼@	.07
Dryolene (f.o.b. Okla.)	gal.	.10 @	.10½
Gasoline, steel bbls.	gal.	.16 @	—
Naphtha, solvent	gal.	.35 @	.40
Rub-Sol (f.o.b. Okla.)	gal.	.09 @	—
Turpentine, spirits	gal.	.41 @	.42
wood	gal.	.37 @	.39
destructively distilled	gal.	.35 @	—
Waxes			
Beeswax, white	lb.	.34 @	.36
Carnauba	lb.	.30 @	.34
Ceresin, white	lb.	.10 @	.11
Montan, crude	lb.	.06½@	.07
Ozokerite, black	lb.	.24 @	.25
green	lb.	.26 @	.30
Paraffin (c.l.—f.o.b. N. Y.)			
Yellow crude scale	lb.	.02½@	—
White crude scale 124/126	lb.	.02½@	—
Refined, 125/127	lb.	.03¾@	—
Refined, 128/130	lb.	.03¾@	—
Refined, 135/137	lb.	.05¼@	—
Refined, 138/140	lb.	.07¼@	—

ANTI-OXIDANTS

Agerite, Resin	lb.		
Powder	lb.		
White	lb.		
Albasan	lb.	.70 @	.75
Antox	lb.		
B-L-E	lb.	.57 @	.60
Neozone	lb.		
Oxynone	lb.	.68 @	.80
Resistox	lb.	.54 @	.57
Stabilite	lb.	.57 @	.62
Stabilite Alba	lb.	.70 @	.75
VGB	lb.	.55 @	.66

SPECIALTIES

Sunproof	lb.	.35 @	.37½
Sponge Paste	lb.	— @	.30
Tonox	lb.	.56 @	.60

SUBSTITUTES

Black	lb.	.08 @	.14
White	lb.	.10 @	.16
Brown	lb.	.08 @	.15

VULCANIZING INGREDIENTS

Sulfur Chloride (drums)	lb.	.03½@	.04½
Sulfur flour, Ref'n'd, 100% pure (bags)	cwt.	2.40 @	2.75
Commercial (bags	cwt.	1.75 @	2.10
Vandex	lb.		

TIRES & TUBES
CRUDE RUBBER

STATISTICAL SECTION

AUTOMOBILES
GASOLINE

ESTABLISHMENT of foreign factory branches by domestic rubber companies had its effect upon rubber consumption statistics last year. While the absorption of crude rubber in Great Britain, where four American tire manufacturers now have branch plants, was the highest in history, consumption in the United States dropped to the level of 1927. The construction of branch factories in Argentina by the two largest tire manufacturers will also serve to cut down United States rubber consumption somewhat in coming years.

English warehouse stocks at London and Liverpool increased again during the fortnight to 119,558 long tons on January 3 as compared to 117,774 long tons on December 13. On the first Saturday in January, 1930, English warehouse stocks were only 76,054 long tons, or less than the present figure for London alone. Stocks on hand and afloat to the United States are at the highest levels in history and show no signs of declining until spring. November imports into the United States were the lowest since June, 1928, and may signify an end to the extraordinarily heavy receipts of the last two years.

Figures covering imports and exports from the leading producing and consuming countries have been added to the appropriate tables in this section.

PLAN OF THE SECTION

The statistics included in this section have been chosen for their constant importance to the rubber industry. The tables are reprinted in the same relative position in every issue, each table being kept current by the addition of new figures as soon as they become available.

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U. S. Imports and Exports of Crude Rubber

	Gross Imports			Re-exports			Net Imports
YEARS	Long Tons	Total Declared Value	Average Declared Value per pound Cents	Long Tons	Total Declared Value	Average Declared Value per pound Cents	Long Tons
1921	185,394	73,772,677	17.76	5,716	2,414,924	18.86	179,678
1922	301,076	101,843,188	15.10	4,809	1,921,828	17.84	296,267
1923	309,144	185,060,304	26.72	8,772	5,672,319	28.87	300,372
1924	328,056	174,231,331	23.71	10,309	6,057,637	26.23	317,747
1925	396,642	429,705,014	48.36	14,827	19,847,753	59.76	381,815
1926	413,338	505,817,807	54.63	17,671	22,470,583	56.77	395,667
1927	426,258	339,874,774	35.60	27,775	24,735,488	39.76	398,483
1928	439,731	244,854,973	25.03	32,159	18,128,361	25.17	407,572
1929	560,084	239,178,783	19.15	36,485	16,868,733	20.64	523,599
1928:							
Jan.	39,107	30,278,444	34.56	1,988	1,734,990	38.95	37,119
Feb.	33,663	27,763,655	36.82	2,738	2,229,589	36.35	30,925
Mar.	40,611	32,103,042	35.29	3,718	2,587,435	31.07	36,893
Apr.	37,935	27,287,266	32.11	2,272	1,415,024	27.80	35,663
May	31,059	19,058,672	27.39	2,399	1,386,307	25.80	28,660
June	27,765	14,121,219	22.71	2,621	1,400,697	23.86	25,144
July	31,258	14,144,765	20.20	3,087	1,451,446	20.99	28,171
Aug.	31,204	12,860,150	18.39	2,377	1,084,646	20.37	28,827
Sept.	39,835	16,512,019	18.50	3,038	1,384,148	20.34	36,797
Oct.	44,058	18,200,332	18.44	2,405	1,085,407	20.15	41,653
Nov.	36,519	14,878,441	18.19	2,788	1,207,089	18.52	33,731
Dec.	43,511	17,580,966	18.04	2,738	1,165,743	19.00	40,773
1929:							
Jan.	57,564	22,872,943	17.74	3,663	1,773,401	21.61	53,901
Feb.	64,265	24,760,111	17.20	2,955	1,374,783	20.77	61,310
Mar.	50,604	20,380,905	17.98	4,218	2,094,037	22.16	46,386
Apr.	55,725	25,542,726	20.46	3,293	1,624,237	22.02	52,432
May	51,161	24,855,511	21.25	2,836	1,349,690	21.24	48,325
June	41,663	18,799,307	20.14	3,152	1,470,746	20.83	38,511
July	48,944	19,342,147	19.65	3,424	1,590,411	20.73	40,520
Aug.	37,222	16,530,090	19.83	2,644	1,232,217	20.80	34,578
Sept.	34,472	15,214,485	19.70	2,011	861,068	19.11	32,461
Oct.	38,163	16,192,261	18.94	2,614	1,190,510	20.33	35,549
Nov.	43,507	18,189,305	18.66	2,929	1,300,354	19.82	40,578
Dec.	42,952	17,573,330	18.27	2,745	1,007,279	16.38	40,207
1930:							
Jan.	47,496	17,793,563	16.72	3,144	1,077,415	15.30	44,352
Feb.	42,687	14,798,240	15.48	2,280	960,790	18.80	40,407
Mar.	44,976	14,653,243	14.54	3,187	1,192,708	16.71	41,789
Apr.	45,423	14,783,605	14.53	2,688	892,532	14.82	42,735
May	42,692	13,373,232	13.98	3,154	1,085,432	15.37	39,538
June	39,993	12,215,848	13.79	3,125	1,027,136	14.67	36,868
July	35,182	10,553,944	13.39	2,732	736,863	12.04	32,450
Aug.	35,713	9,666,362	12.08	2,194	646,667	13.16	33,519
Sept.	35,380	8,460,812	10.68	1,509	429,789	12.72	33,871
Oct.	46,069	9,893,980	9.59	2,054	348,331	7.57	44,015
Nov.	29,401	5,700,086	8.66	1,296	271,847	9.37	28,105
Dec.							

U. S. Consumption of Crude Rubber

(Rubber Manufacturers' Association statistics raised to 100 per cent—All figures in long tons)

Figures on Monthly Basis

	1923	1924	1925	1926	1927	1928	1929	1930
Jan.	30,106	29,058	29,638	32,196	31,518	34,403	43,002	36,669
Feb.	30,149	25,736	29,761	31,136	30,137	33,702	41,594	32,726
Mar.	36,629	28,385	33,498	32,936	36,141	35,688	44,730	35,914
Apr.	29,085	27,129	34,139	32,696	35,871	32,772	47,521	40,207
May	36,155	25,845	35,322	29,364	34,592	37,333	49,233	39,902
June	24,272	22,753	35,822	28,598	33,801	37,676	43,227	34,463
July	17,685	23,396	36,053	27,577	29,219	37,407	41,526	29,245
Aug.	20,359	28,982	35,909	34,533	33,460	42,927	38,274	30,575
Sept.	17,594	31,497	31,691	32,904	27,214	39,882	34,707	25,288
Oct.	21,321	31,520	29,047	29,836	26,790	40,857	34,800	27,271
Nov.	20,437	27,289	28,853	28,080	26,792	37,461	27,659	23,479
Dec.	31,902	27,199	28,748	26,293	25,492	31,232	23,531	
Totals	305,694	328,769	388,481	366,149	371,027	441,340	469,804	

Figures on Quarterly Basis

Quarter	1923	1924	1925	1926	1927	1928	1929	1930
Jan./Mar.	96,776	87,609	95,263	94,301	99,216	103,558	128,565	101,610
Apr./June	89,493	75,674	104,099	87,109	103,242	108,500	139,292	112,092
July/Sept.	55,621	83,813	99,493	93,793	89,210	117,573	113,746	85,261
Oct./Dec.	63,617	92,656	85,789	83,212	80,860	117,597	84,872	
Totals	305,507	339,752	384,644	358,415	372,528	442,227	466,475	

Note—The Rubber Association estimates its monthly rubber consumption figures to be 90 per cent complete. Up until 1925 the quarterly figures were likewise estimated to be 90 per cent complete; beginning with 1925 an estimate of 92 per cent completeness has been used. These estimates have been used in raising the figures in this table to 100 per cent. The quarterly figures are generally regarded as the most authentic; the monthly figures may be accepted as preliminary.

U. S. Consumption of Gasoline

(In Barrels of 42 Gallons)

MONTHS	1929	1930	MONTHS	1929	1930
January	22,602,000	25,731,000	July	36,860,000	38,256,000
February	22,776,000	26,509,000	August	37,759,000	37,433,000
March	28,495,000	31,029,000	September	34,193,000	37,823,000
April	32,019,000	34,549,000	October	32,816,000	32,267,000
May	34,117,000	36,497,000	November	31,502,000	30,984,000
June	33,163,000	35,902,000	December	26,550,000	

Daily Spot Closing Prices of Ribbed Smoked Sheet Rubber—*New York Market, in Cents per Pound*

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Ave
1928																																
September	—	—	—	19	18¾	18⅝	18⅝	18⅝	—	17⅞	18¼	18½	18½	18¼	18½	—	18¼	18½	18½	18¼	18	18	20⅝	20½	18⅝	18⅝	18⅝	18⅝	18⅝	18⅝	—	18¾
October	18⅝	18½	18½	18¾	18⅝	18⅝	18⅝	18⅝	18⅝	18¾	19	—	18¾	18⅝	18⅝	18⅝	19	19	19	19	—	20	19	18⅝	18⅝	18⅝	18⅝	18⅝	18⅝	18¾	18¾	18¾
November	18¾	18⅝	18¾	18¾	18⅝	18⅝	18⅝	—	18⅝	18⅝	18	18	18	18	17⅞	17⅞	17⅞	18	18	18	18¼	18	18	17⅞	17⅞	17⅞	17⅞	17⅞	17⅞	17⅞	—	18
December	17¾	—	17¾	17¾	17¾	18¼	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	17⅞	17⅞	17⅞	17⅞	18¼	18¼	18
1929																																
January	22⅝	22	21⅝	21⅝	21⅝	22¾	22¾	22¾	22¾	22¾	22¾	22¾	22¾	22¾	22¾	22¾	22¾	22¾	22¾	22¾	22¾	22¾	22¾	22¾	22¾	22¾	22¾	22¾	22¾	22¾	22¾	22¾
February	22⅝	22	21⅝	21⅝	21⅝	22¾	22¾	22¾	22¾	22¾	22¾	22¾	22¾	22¾	22¾	22¾	22¾	22¾	22¾	22¾	22¾	22¾	22¾	22¾	22¾	22¾	22¾	22¾	22¾	22¾	22¾	22¾
March	22⅝	22	21⅝	21⅝	21⅝	22¾	22¾	22¾	22¾	22¾	22¾	22¾	22¾	22¾	22¾	22¾	22¾	22¾	22¾	22¾	22¾	22¾	22¾	22¾	22¾	22¾	22¾	22¾	22¾	22¾	22¾	22¾
April	23	22¾	22½	22½	22½	22¾	22¾	22¾	22¾	22¾	22¾	22¾	22¾	22¾	22¾	22¾	22¾	22¾	22¾	22¾	22¾	22¾	22¾	22¾	22¾	22¾	22¾	22¾	22¾	22¾	22¾	22¾
May	23	23	22¾	22¾	22¾	22¾	22¾	22¾	22¾	22¾	22¾	22¾	22¾	22¾	22¾	22¾	22¾	22¾	22¾	22¾	22¾	22¾	22¾	22¾	22¾	22¾	22¾	22¾	22¾	22¾	22¾	22¾
June	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23
July	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23
August	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23
September	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23
October	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23
November	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23
December	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23
1930																																
January	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23
February	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23
March	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23
April	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23
May	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23
June	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23
July	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23
August	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23
September	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23
October	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23
November	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23
December	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23
1931																																
January	—	8⅝	8⅝	—	8¼																											

Average Spot Closing Prices—Ribbed Smoked Sheets

(New York Market)

Average Price per Pound for Years 1910-1921

Year	Cents	Year	Cents	Year	Cents
1910	206.60	1914	65.33	1918	60.15
1911	141.30	1915	65.85	1919	48.70
1912	121.60	1916	72.50	1920	36.30
1913	82.04	1917	72.23	1921	16.36

Average Monthly Price per Pound Since 1922

Months	1922 Cents	1923 Cents	1924 Cents	1925 Cents	1926 Cents	1927 Cents	1928 Cents	1929 Cents	1930 Cents
Jan.	18.82	32.73	25.86	36.71	79.50	38.75	40.25	20.14	15.24
Feb.	16.12	35.14	25.29	36.01	62.25	38.25	32.75	23.97	15.55
Mar.	14.53	34.21	22.83	41.00	59.00	41.04	26.82	24.55	15.34
Apr.	15.99	32.48	22.51	43.64	51.25	40.86	18.97	21.18	14.93
May	15.25	27.39	18.89	58.47	47.75	40.76	18.99	21.46	14.24
June	15.11	26.88	18.81	77.26	42.50	37.25	19.59	20.64	12.45
July	14.67	26.10	22.16	103.16	41.03	34.87	19.40	21.30	11.24
Aug.	13.93	28.84	26.17	82.99	38.50	35.12	19.46	20.59	9.96
Sept.	14.44	28.95	27.56	88.88	41.00	33.67	18.47	20.37	8.28
Oct.	19.78	26.93	31.13	98.01	42.50	34.32	18.83	19.67	8.20
Nov.	23.88	27.14	34.33	104.80	38.50	37.58	18.26	16.62	9.01
Dec.	27.42	26.60	37.88	98.51	38.25	40.63	17.97	16.12	9.05
Average for Year	17.50	29.45	26.20	72.46	48.50	37.72	22.48	20.55	11.98

London Closing Prices of Ribbed Smoked Sheet

(In Pence Per Pound)

Day	Oct.	Nov.	Dec.	Jan.	Day	Oct.	Nov.	Dec.	Jan.
1	3⅝	4⅜	4⅝	—	17	3⅞	4⅜	4¼	—
2	3¾	—	4¾	—	18	3⅞	4⅜	4½	—
3	4	4⅛	4¾	4⅛	19	—	4⅜	4⅜	—
4	4	4⅛	4⅝	—	20	4	4⅜	4⅜	—
5	—	4½	4⅝	4¼	21	4⅛	4⅜	—	—
6	3⅞	4⅛	4⅝	—	22	4	4⅜	4⅜	—
7	3⅞	4¼	—	—	23	4⅛	—	4¼	—
8	4	4⅛	4¾	—	24	4¼	4⅜	4⅜	—
9	4	—	4¾	—	25	4⅜	4⅜	—	—
10	3⅞	4¼	4¾	—	26	—	4⅜	—	—
11	3⅞	4⅜	4¾	—	27	4¼	4½	—	—
12	—	4⅜	4¾	—	28	4¼	4½	—	—
13	3⅞	4⅜	4⅝	—	29	4⅜	4⅜	4¼	—
14	3⅞	4½	—	—	30	4⅜	—	4¼	—
15	3⅞	4½	4½	—	31	4⅜	—	4¼	—
16	3⅞	—	4⅜	—					

Average Monthly Price Per Pound

Month	1928 Pence	1929 Pence	1930 Pence	Month	1928 Pence	1929 Pence	1930 Pence
Jan.	19.310	9.942	7.471	Aug.	9.300	10.505	4.880
Feb.	15.713	11.875	7.948	Sept.	8.530	10.160	4.075
Mar.	12.736	12.135	7.595	Oct.	8.807	9.620	4.022
Apr.	8.864	10.490	7.391	Nov.	8.596	8.442	4.440
May	8.845	10.717	6.926	Dec.	8.570	7.958	4.516
June	9.293	10.580	6.195	Average			
July	9.312	11.065	5.648	for Year	10.656	10.291	5.926

Spot Closing Cotton Prices

(Middling Upland Grade—New York Market)

Recent Daily Price Per Pound

Day of Month	Dec.	Jan.	Day of Month	Dec.	Jan.	Day of Month	Dec.	Jan.
1	10.40	——	11	9.85	——	21	——	——
2	10.60	10.15	12	9.85	——	22	9.80	——
3	10.60	10.30	13	9.60	——	23	9.80	——
4	10.45	——	14	——	——	24	9.85	——
5	10.45	10.15	15	9.45	——	25	——	——
6	10.45	——	16	9.60	——	26	9.80	——
7	——	——	17	9.95	——	27	9.80	——
8	10.30	——	18	9.80	——	28	——	——
9	10.30	——	19	9.75	——	29	9.95	——
10	10.15	——	20	9.85	——	30	10.00	——
						31	10.00	——

Average Monthly Price Per Pound

Month	1928 Cents	1929 Cents	1930 Cents	Month	1928 Cents	1929 Cents	1930 Cents
Jan.	19.12	20.22	17.21	Aug.	19.28	18.62	12.03
Feb.	18.40	20.21	15.62	Sept.	18.67	18.83	10.85
Mar.	19.38	20.19	15.13	Oct.	19.62	18.46	10.63
Apr.	20.63	20.29	16.39	Nov.	19.84	17.53	10.96
May	21.58	19.41	16.43	Dec.	20.22	17.28	10.02
June	21.50	18.74	14.48	Average			
July	21.36	18.62	13.10	for Year	19.97	19.03	13.57

World Stocks of Crude Rubber

ON HAND OR AFLOAT TO THE U. S.

At End of	ON HAND 1928	ON HAND 1929	ON HAND 1930	AFLOAT 1928	AFLOAT 1929	AFLOAT 1930	ON HAND AND AFLOAT 1928	ON HAND AND AFLOAT 1929	ON HAND AND AFLOAT 1930
Jan.	110,244	76,342	126,068	46,441	93,330	65,483	156,685	169,672	191,551
Feb.	108,955	90,058	134,790	48,044	75,790	71,015	156,999	165,848	205,805
Mar.	114,061	100,536	141,843	43,378	67,065	63,646	157,439	167,601	205,489
Apr.	113,083	107,659	148,272	32,783	65,798	63,261	145,866	173,457	211,533
May	105,356	97,192	146,179	33,145	65,793	68,168	138,501	162,985	214,347
June	90,198	92,061	151,485	38,392	54,668	58,657	128,590	146,729	210,142
July	83,242	92,535	152,001	42,943	46,145	58,326	126,185	138,680	210,327
Aug.	68,994	90,769	158,178	54,904	49,423	61,168	123,898	140,192	219,346
Sept.	69,851	84,362	169,607	52,692	58,758	60,923	121,543	143,120	230,530
Oct.	66,421	88,483	184,701	45,646	59,180	51,122	112,067	147,663	235,823
Nov.	61,956	92,219	189,925	75,502	62,358	52,538	137,458	154,577	242,463
Dec.	66,166	118,609		92,037	62,388		158,203	180,997	

(Rubber Manufacturers' Association figures raised to 100%.)

STOCKS IN GREAT BRITAIN

Stocks in London

(No. of Tons in Wharves and Warehouses, including Latex)

At end of	1928	1929	1930	At end of	1928	1929	1930
Jan.	66,524	25,191	60,434	July	35,429	30,080	81,048
Feb.	62,964	25,554	64,557	Aug.	32,084	35,605	80,931
Mar.	58,272	28,214	68,923	Sept.	31,440	42,188	83,329
Apr.	53,425	31,365	74,676	Oct.	24,207	47,803	77,647
May	44,628	31,290	77,312	Nov.	17,775	52,454	
June	35,756	31,025	80,260	Dec.	19,815	54,304	

At End of Recent Weeks

	First Saturday	Second Saturday	Third Saturday	Fourth Saturday	Fifth Saturday
1930					
September	81,830	82,233	82,648	83,186	
October	81,544	82,245	83,102	82,218	
November	77,480	75,159	76,042	76,448	76,670
December	76,877	77,493	77,460	77,328	
1931					
January	78,042				

Stocks in Liverpool

1930				
September	31,159	31,796	34,085	34,858	
October	36,378	37,244	37,211	38,345	
November	38,941	39,336	40,003	40,492	39,933
December	40,349	40,281	40,300	40,593	
1931					
January	41,516				

STOCKS IN PENANG AND SINGAPORE

(Stocks held by Dealers—Quantities in Long Tons)

End of	1928	1929	1930	End of	1928	1929	1930
Jan.	25,868	29,617	39,727	July	18,663	33,359	45,459
Feb.	22,867	32,373	44,371	Aug.	18,971	30,834	48,132
Mar.	20,538	29,437	45,657	Sept.	14,898	32,138	44,015
Apr.	16,946	26,474	48,473	Oct.	12,149	33,770	39,930
May	17,437	30,764	44,715	Nov.	29,188	30,963	—
June	18,207	30,403	42,451	Dec.	32,895	35,548	—

STOCKS IN OTHER CENTRES

1930 End of	Malaya Mainland	Afloat for Europe	Holland	Colombo	Para and Manaos
Jan.	44,740	28,440	2,134	5,400	3,668
Feb.	41,955	28,180	2,159	5,000	4,370
Mar.	39,206	27,510	2,220	4,759	4,578
Apr.	39,758	23,580	2,204	4,000	4,482
May	26,482	22,730	2,308	4,000	4,388
June	36,578	20,020	2,316	3,856	4,588
July	38,311	27,290	2,312	4,500	4,665
Aug.	39,482	30,310	2,196	5,200	4,489
Sept.	39,863	31,000	2,343	5,834	4,854
Oct.	38,587	30,000	2,378		5,156
Nov.	40,551				4,535

Rims Inspected and Passed in U. S.

(Tire and Rim Association Reports)

	Total	Per Cent Balloons		Total	Per Cent Balloons
1922	16,297,785	0.0	1926	24,199,524	78.8
1923	23,140,620	0.6	1927	19,700,003	79.1
1924	21,863,311	19.7	1928	24,247,282	81.6
1925	26,001,664	66.8	1929	24,141,502	80.3
1930			1930		
January	1,601,326	84.0	July	1,449,161	80.7
February	1,653,421	78.9	August	1,504,187	78.1
March	2,061,999	79.1	September	1,052,109	80.2
April	2,339,534	81.1	October	863,579	78.3
May	2,010,067	84.3	November	920,435	72.2
June	1,338,226	83.5	December		

Tire and Tube Statistics

(Figures Represent Thousands)

AUTOMOBILE CASINGS

Figures for Recent Years

	1922	1923	1924	1925	1926	1927	1928	1929
Production	40,932	45,259	51,633	60,845	61,237	64,439	77,944	68,726
Shipments	39,987	45,204	50,120	59,262	59,002	64,059	74,296	69,395
Inventory[2]	6,132	5,772	7,427	8,142	10,456	10,264	13,624	11,838

Figures for Recent Months

	PRODUCTION 1928	1929	1930	SHIPMENTS 1928	1929	1930	INVENTORY 1928	1929	1930
Jan.	5,358	6,301	4,485	5,394	6,211	4,406	9,949	12,855	11,924
Feb.	6,363	6,479	4,555	5,031	4,951	4,195	11,721	14,525	11,410
Mar.	6,819	7,049	4,863	5,731	6,289	4,717	12,389	15,329	12,513
Apr.	6,178	7,391	5,648	5,812	6,838	5,089	12,717	15,870	13,076
May	6,759	7,636	3,717	6,457	6,735	5,216	13,024	16,733	13,432
June	6,692	6,847	5,122	7,117	6,800	5,294	12,162	16,497	13,277
July	6,498	6,320	3,991	7,895	7,364	5,447	11,157	15,034	11,812
Aug.	7,469	5,693	4,166	8,403	7,354	5,175	10,034	13,337	10,848
Sept.	6,802	4,460	3,365	7,145	5,623	4,405	9,705	12,070	9,812
Oct.	7,326	4,611	3,582	5,717	4,649	3,499	11,520	12,042	9,803
Nov.	6,075	3,378		4,998	3,355		12,579	12,127	
Dec.	5,605	3,057		4,591	3,237		13,624	11,838	

AUTOMOBILE INNER TUBES

Figures for Recent Years

	1922	1923	1924	1925	1926	1927	1928	1929
Production	50,850	60,116	70,706	82,614	76,618	70,823	80,180	68,829
Shipments	49,673	59,072	68,016	81,004	71,591	72,896	77,127	70,592
Inventory[2]	7,643	8,425	11,052	11,313	16,200	13,692	16,117	12,807

Figures for Recent Months

	PRODUCTION 1928	1929	1930	SHIPMENTS 1928	1929	1930	INVENTORY 1928	1929	1930
Jan.	5,441	6,109	4,607	6,072	6,789	4,857	12,982	14,424	12,704
Feb.	6,895	6,346	4,634	5,431	4,948	4,337	14,650	15,936	13,036
Mar.	6,231	7,000	4,941	5,731	6,317	4,727	15,573	16,641	13,179
Apr.	6,661	7,157	5,510	5,702	6,716	4,848	16,638	17,000	13,784
May	7,168	7,181	5,535	6,300	6,598	5,074	17,702	17,745	13,852
June	6,953	6,542	4,950	7,136	6,515	5,265	17,159	17,294	13,612
July	6,674	5,793	3,939	8,729	7,605	5,855	14,974	15,311	11,657
Aug.	8,343	5,481	4,796	9,350	7,672	5,762	13,931	13,072	10,737
Sept.	7,103	5,190	3,817	7,154	5,859	4,541	13,543	12,585	10,065
Oct.	6,929	5,000	3,951	5,662	4,689	3,472	15,285	12,802	10,517
Nov.	5,592	3,544		5,002	3,480		15,743	12,845	
Dec.	5,184	3,484		4,858	3,404		16,117	12,807	

(1) Rubber Manufacturers' Association figures, raised to 100%. The Association estimates its figures to be 75% complete up until 1929 and 80% complete beginning with 1929, and that basis has been accepted when preparing the statistics in this table.

(2) Held by manufacturers at end of period indicated.

Automobile Production

	United States Total	Passenger Cars	Trucks	Canada Total	Passenger Cars	Trucks	Grand Total
1923	4,020,255	3,631,728	388,527	146,438	129,228	17,210	4,166,693
1924	3,600,918	3,203,049	397,869	135,246	117,765	17,481	3,736,164
1925	4,265,704	3,760,459	505,245	161,389	139,311	22,078	4,427,093
1926	4,298,799	3,808,753	490,046	205,092	164,463	40,609	4,503,891
1927	3,393,887	2,938,868	453,019	179,484	146,899	32,556	3,573,313
1928	4,357,384	3,826,613	530,771	242,382	196,737	45,645	4,599,944
1929							
Jan.	402,154	350,617	51,537	21,501	17,164	4,337	423,655
Feb.	466,084	407,589	58,495	31,287	25,584	5,703	497,371
March	584,733	513,266	69,559	40,621	32,833	7,788	625,354
April	620,656	538,679	81,977	41,901	34,392	7,509	662,557
May	603,969	516,055	86,596	31,559	25,129	6,430	635,528
June	545,252	453,956	91,296	21,492	16,511	4,981	566,744
July	500,331	427,213	73,118	17,461	13,600	3,861	517,792
Aug.	499,629	444,711	54,918	14,214	11,037	3,177	513,843
Sept.	415,332	365,651	49,681	13,817	10,710	3,107	429,149
Oct.	380,011	321,195	58,816	14,523	8,975	5,548	394,534
Nov.	217,570	170,928	46,642	9,424	7,137	2,287	226,994
Dec.	119,950	92,717	27,233	5,495	4,426	1,069	125,445
TOTAL	5,358,420	4,587,400	771,020	263,295	207,498	55,797	5,621,715
1930							
Jan.	273,089	235,099	37,990	10,388	8,856	1,532	283,477
Feb.	346,940	297,483	49,457	15,548	13,021	2,527	362,488
March	401,378	336,178	64,200	20,730	17,165	3,565	422,108
April	442,630	375,171	67,459	24,257	20,872	3,385	466,887
May	417,154	362,784	54,370	24,672	21,251	3,421	441,826
June	335,475	289,704	45,771	15,090	12,194	2,896	350,565
July	262,363	222,700	39,663	10,188	8,556	1,632	272,551
Aug.	223,046	187,288	35,758	9,792	6,946	2,846	232,838
Sept.	216,877	175,720	41,157	7,957	5,623	2,334	224,834
Oct.	150,044	112,800	37,244	4,541	3,206	1,335	154,585
Nov.	129,437	98,137	31,300	5,407	3,527	1,880	134,844
Dec.							

Exports of Crude Rubber from Principal Producing Countries

Long Tons

	BRITISH MALAYA[1]							DUTCH EAST INDIES[5]							
	Gross Exports	Imports	Gross Exports Minus Imports	Ceylon[2]	India & Burma[3]	Sarawak[4]	British North Borneo[3]	Siam[4]	Java & Madura	Sumatra E. Coast	Other D.E.I.	Indo-China[3]	Amazon Valley	All Other[6]	World Total[7]
1923	252,016	70,432	181,584	39,971	6,416	5,705	4,237	1,718	32,930	46,344	57,822	5,067	16,765	7,856	406,955
1924	259,706	108,524	151,182	39,997	7,697	6,699	4,621	2,962	42,446	54,497	80,347	6,688	23,165	9,065	429,366
1925	316,825	158,022	158,803	49,566	10,082	5,424	5,377	5,377	46,757	65,499	120,626	7,881	25,298	13,797	517,528
1926	391,328	151,243	240,085	58,962	9,874	9,155	6,079	4,027	52,186	71,413	121,231	8,203	24,298	16,017	621,530
1927	371,322	182,845	188,477	55,356	11,321	10,923	6,582	5,472	55,297	77,815	142,171	8,645	28,782	15,633	606,474
1928	409,430	149,787	259,643	57,267	10,790	10,087	6,698	4,813	58,848	82,511	121,770	9,548	21,129	10,690	653,794
1929	574,836	163,092	411,744	81,584	11,663	11,077	7,381	5,018	65,990	87,789	134,037	9,696	21,148	6,767	853,894
1928:															
Sept.	29,769	11,239	18,530	4,675	457	938	594	447	4,956	6,536	9,863	969	1,614	494	50,073
Oct.	24,476	12,603	11,873	3,999	864	949	564	457	5,295	7,474	10,124	513	1,399	732	44,243
Nov.	68,135	10,436	57,699	8,005	1,048	772	564	425	4,950	7,902	7,805	943	1,790	623	92,526
Dec.	66,763	11,122	55,641	7,848	1,113	744	565	294	5,120	8,792	10,896	948	2,220	588	94,769
1929:															
Jan.	52,546	13,415	39,131	8,301	1,664	873	600	461	5,640	8,067	11,076	850	2,134	642	79,439
Feb.	47,926	12,103	35,823	7,064	1,117	955	600	495	6,572	7,511	10,384	807	2,104	520	73,952
Mar.	49,448	14,553	34,895	6,583	1,413	758	601	499	5,515	6,620	10,629	658	2,332	786	71,289
Apr.	49,816	11,414	38,402	5,097	727	747	548	306	5,997	6,645	11,321	673	1,950	569	72,982
May	43,960	15,593	28,367	5,723	800	966	548	453	6,264	6,961	13,437	1,059	1,922	733	67,233
June	40,398	14,344	26,054	5,563	1,122	1,061	547	422	5,582	6,693	11,270	757	1,398	548	61,017
July	46,454	15,071	31,383	5,457	974	1,247	641	462	6,422	7,192	13,995	575	1,457	543	70,348
Aug.	50,441	15,469	34,972	6,079	685	993	641	431	4,644	7,298	10,782	1,032	1,563	499	69,619
Sept.	53,484	12,392	41,092	7,993	384	832	640	406	4,708	7,517	10,149	655	1,566	504	76,446
Oct.	47,937	12,516	35,421	8,381	812	1,047	671	485	4,697	8,295	10,512	893	1,606	445	73,265
Nov.	46,279	11,204	35,075	6,660	1,065	668	672	278	4,760	6,711	9,380	771	1,442	535	68,017
Dec.	46,147	15,018	31,129	8,683	900	930	672	320	5,189	8,279	11,102	966	1,674	443	70,287
1930:															
Jan.	52,535	11,773	40,762	7,741	1,560	791	642	386	5,709	7,881	8,920	856	1,837	585	77,620
Feb.	48,947	12,960	35,987	7,825	1,245	847	642	469	6,900	7,191	11,414	944	1,797	480	75,741
Mar.	47,320	13,236	34,084	6,269	1,129	976	642	391	5,796	6,612	11,070	643	1,674	536	69,822
Apr.	45,517	16,331	29,186	5,030	856	1,026	502	366	4,802	6,326	12,582	433	1,201	630	62,940
May	49,388	36,135	13,253	5,947	975	917	502	350	6,352	6,661	11,916	753	1,383	555	49,564
June	36,657	12,120	24,537	4,152	778	1,040	201	392	4,728	4,776	9,512	425	974	551	52,066
July	41,347	12,759	28,588	4,619	792	1,087	600	327	6,022	5,891	9,770	648	810	418	59,572
Aug.	47,982	10,304	37,678	6,779	600	740	500*	335	5,982	7,197	9,520	394	809	382	70,916*
Sept.	48,529	8,087	40,442	7,920	343	680	400*	289	5,960	6,358	7,302	527	1,093	400*	71,714*
Oct.	47,770	7,312	40,458	7,3 8	591	598	400*	247	5,916	6,956	6,352	667	669	400*	70,642*
Nov.	41,420	7,566	33,854	5,835								654	658		

(1) Malayan net exports cannot be taken as production, since imported rubber is largely wet native rubber, which is reduced about one-third in weight by remilling; rubber exported as latex is not included which on a basis of 3½ pounds per gallon amounted to 115 tons in 1923, 1,117 in 1924, 3,618 in 1925, 3,263 in 1926, 2,439 in 1927 and 1,437 in 1928. (2) Ceylon Chamber of Commerce statistics until 1926; rubber exported as latex is not included—such shipments were equivalent to 18 tons in 1923, 93 tons 1924, 6 tons 1925, 20 tons in 1926, about ½ ton in 1927, and 1 ton in 1928. (3) Official statistics. (4) Imports into Singapore and Penang. (5) Exports from "Other D.E.I." are chiefly wet native rubber, which is reduced about one-third in weight by remilling; rubber exported as latex is not included which on a basis of 3½ pounds per gallon amounted to 2,342 tons in 1923, 1,008 tons 1924, 2,239 tons 1925, 44 tons in 1926, 84 tons in 1927, and 1,459 tons in 1928. (6) Calculated from official import statistics of principal consuming countries, viz., United States, United Kingdom, France, Germany, Belgium and Netherlands. This figure includes guayule rubber. (7) This total includes the third column for British Malaya, "Gross Exports minus Imports," and all the figures shown for the other territories. *Figure is provisional; final figure will be shown immediately it becomes available.

Net Imports of Crude Rubber into Principal Manufacturing Countries

(Long Tons)

	United States[1]	United Kingdom	France (h)	Germany	Canada (ac)	Japan (da)	Italy	Russia (ce)	Australia (cd)	Belgium (d)	Netherlands	Scandinavia (abcdf)	Spain (g)	Czechoslovakia (abcd)	World Total
1919	238,407	42,671	17,685	5,584	6,395	9,753	9,894	75	1,002	3,995	2,771	3,149	2,418	9	343,808
1920	249,530	56,844	13,885	11,890	11,746	5,297	6,123	62	1,815	3,840	5,510	2,292	2,008	567	371,399
1921	179,736	42,087	15,135	21,920	8,124	21,713	3,906	165	1,014	1,705	1,022	1,279	2,245	569	300,620
1922	296,594	11,724	24,352	27,546	9,207	15,934	6,430	2,493	2,643	172	—3,807	1,778	589	567	396,012
1923	301,527	12,700	27,392	18,519	13,277	15,372	8,489	2,986	1,649	2,184	792	2,528	630	1,128	409,173
1924	319,103	—11,550	30,446	22,727	14,299	19,571	8,764	2,346	3,124	2,688	—807	3,178	944	1,370	416,203
1925	385,596	4,061	32,956	33,937	19,683	11,117	11,412	7,088	4,757	2,930	875	3,149	1,155	1,558	520,274
1926	399,981	84,865	34,240	22,775	20,229	18,125	9,809	6,529	9,021	2,498	2,670	4,046	1,299	1,870	617,957
1927	403,472	60,249	34,271	38,892	26,405	20,521	11,381	12,018	9,490	6,482	636	4,224	2,055	2,672	632,808
1928	407,572	4,846	36,498	37,855	30,447	25,621	12,433	15,134	8,430	7,958	2,243	4,418	3,178	3,138	599,771
1929	528,608	122,675	55,093	49,275	35,453	34,284	17,169	11,774	15,886	9,445	3,022	6,440	864	4,650	894,015
1928:															
Sept.	36,800	4,199	3,524	3,553	2,812	1,837	1,278	20	603	597	345	377	277	235	56,457
Oct.	41,667	—934	3,728	4,386	2,943	3,711	1,049	98	766	696	141	527	250	318	59,346
Nov.	33,346	—3,141	3,278	3,694	2,799	2,150	1,340	689	837	544	31	337	252	282	46,938
Dec.	40,781	8,438	3,633	2,470	2,618	3,002	1,145	1,378	755	639	148	435	263	206	65,905
1929:															
Jan.	53,922	11,951	5,645	4,711	3,759	3,776	1,481	956	1,061	749	218	638	179	525	89,571
Feb.	61,331	5,179	5,001	4,613	2,908	2,727	1,259	684	1,131	627	113	226	115	356	86,270
Mar.	46,391	9,068	4,409	4,586	4,961	2,630	1,515	716	725	931	316	354	80	409	77,091
Apr.	52,520	8,295	4,854	5,351	3,177	2,308	1,407	703	1,518	750	144	956	40	445	82,478
May	48,475	5,112	3,152	3,682	2,937	2,314	1,417	996	1,437	854	201	468	37	277	71,359
June	38,821	4,787	6,814	3,948	3,075	1,593	1,624	695	2,215	672	687	507	24	520	65,882
July	41,114	4,993	4,839	3,559	3,205	2,388	2,023	1,056	2,918	1,039	253	519	30	455	68,401
Aug.	35,397	14,594	4,645	4,082	2,879	3,663	908	1,234	724	902	254	429	25	319	70,055
Sept.	32,912	17,010	3,889	4,691	1,908	3,511	1,224	1,235	853	672	253	361	91	477	68,453
Oct.	36,040	16,111	4,489	3,355	1,821	3,902	1,838	1,073	1,125	1,147	278	710	91	201	72,181
Nov.	41,097	13,141	3,082	3,776	2,709	3,221	1,275	1,226	1,453	361	253	595	62	313	72,564
Dec.	40,588	12,434	4,274	2,921	2,114	2,251	1,198	1,200	726	741	52	677	90	443	69,709
1930:															
Jan.	44,911	11,106	4,207	3,862	2,842	2,805	910	826	332	612	209	552	200*	577	78,949
Feb.	40,702	10,293	4,482	3,697	2,250	1,386	1,385	2,705	457	1,143	188	315	200*	289	69,533
Mar.	42,216	12,346	4,354	4,289	3,776	2,663	1,083	1,153	975	678	358	322	200*	263	74,676
Apr.	43,036	13,058	5,006	4,488	2,303	2,769	2,067	929	673	1,431	158	461	200*	255	76,790
May	40,012	9,861	5,233	4,379	2,593	2,699	1,279	1,645	64	1,250	230	274	200*	282	65,620
June	37,374	9,645	4,458	3,794	2,579	2,677	1,378	1,574	67	691	343	507	200*	282	65,620
July	32,785	7,650	3,311	3,449	3,347	1,206	587	567	84	939	172	756	200*	342	55,395
Aug.	34,513	8,369	3,953	3,515	2,108	2,170	886	149	265	888	37	747	200*	450	58,250
Sept.	34,373	16,015	5,285	4,089	1,578	2,606	1,279	1,373	414	824	221	817	200*	411	69,485
Oct.	44,385	9,095		3,747	1,942		2,460	2,782	609			1,132	200*		
Nov.	28,437														

a—Including gutta percha. b—Including balata. c—Re-exports not deducted in monthly statistics. d—Including some scrap and reclaimed rubber. e—Official statistics of rubber imports by Soviet Russia. f—Including Norway, Sweden, Denmark and Finland. g—United Kingdom and French exports to Spain except in years prior to 1925. h—French imports have been reduced 12 per cent in order to eliminate imports of gutta percha and to reduce to basis of net weight. [1]United States imports of guayule are included in this compilation. *Figure is provisional; final figure will be shown immediately it becomes available.

Domestic Production of Miscellaneous Rubber Goods

	Rubber Proofed Fabrics	Rubber Heels	Rubber Soles	Mechanical Goods Shipments
	Yards	Pairs	Pairs	Dollars
1924	25,020,000	186,279,000	(1)	$48,615,000
1925	23,988,000	206,970,000	16,211,620(2)	64,877,000
1926	29,328,000	183,312,000	12,253,000	76,789,000
1927	37,872,000	201,014,000	27,160,000	68,625,000
1928	41,179,000	235,170,000	37,645,000	69,114,000
1929	50,731,000	232,126,000	34,499,000	74,770,000
1929:				
November	4,395,000	17,863,000	3,400,000	4,932,000
December	2,291,000	14,781,000	3,003,000	4,751,000
1930:				
January	3,281,000	15,470,000	3,496,000	5,169,000
February	3,441,000	14,172,000	2,338,000	5,376,000
March	3,570,000	15,439,000	2,582,000	5,981,000
April	4,029,000	17,762,000	2,593,000	5,989,000
May	3,597,000	15,603,000	1,939,000	6,163,000
June	3,379,000	15,795,000	2,734,000	5,318,000
July	2,940,000	15,117,000	2,663,000	4,910,000
August	3,458,000	13,735,000	1,473,000	4,552,000
September	5,046,000	14,322,000	2,193,000	4,083,000
October	5,209,000	16,460,000	3,056,000	4,186,000

(1) Not available; (2) Last 9 months only.

Source: "Survey of Current of Business of the Department of Commerce."

United States Imports of Guayule, Balata, Jelutong, Liquid Latex

(All quantities in Long Tons)

	Guayule		Balata		Jelutong		Liquid Latex (1)	
	Tons	Dollars	Tons	Dollars	Tons	Dollars	Tons	Dollars
1919	1,430	760,690	727	937,038	8,332	2,213,964	——	——
1920	753	345,985	1,064	1,260,043	5,672	2,068,501	——	——
1921	53	26,945	814	1,077,859	1,745	351,893	——	——
1922	127	57,040	812	978,765	2,335	403,812	——	——
1923	1,155	542,227	700	898,524	4,565	853,308	——	——
1924	1,356	536,392	464	568,456	6,165	1,237,100	2,157	864,059
1925	3,781	1,803,448	517	574,750	6,749	1,642,531	3,853	3,537,810
1926	4,305	2,562,096	354	327,213	7,263	3,127,757	3,388	4,680,386
1927	5,018	2,674,957	582	447,246	7,785	2,448,657	1,116	876,077
1928	3,075	1,755,685	731	430,855	7,552	2,540,059	4,167	2,185,579
1929	1,231	545,175	728	566,964	8,203	2,458,136	3,728	1,787,997
1929:								
Dec.	100	41,328	25	19,955	550	156,939	281	132,265
1930:								
Jan.	150	55,272	28	28,549	509	141,384	407	194,703
Feb.	75	25,956	52	45,319	367	93,087	311	153,848
Mar.	148	50,007	16	12,498	522	128,844	279	107,847
Apr.	75	19,856	58	54,548	410	103,089	226	98,239
May	172	57,760	17	13,645	602	144,415	749	242,385
June	168	51,561	52	47,000	532	120,424	389	129,368
July	93	26,000	24	17,463	45	102,325	242	78,688
Aug.	50	14,000	11	5,600	766	168,511	944	253,127
Sept.	100	28,000	45	29,512	486	86,664	402	127,751
Oct.	64	18,527	36	30,702	490	113,638	306	99,637
Nov.	—	——	73	61,650	389	84,219	332	65,265

(1) Latex import figures not available before 1924.

Reclaimed Rubber in the United States

(All Quantities in Long Tons)

	Consumption					Consumption				
Year	Production	Tons	% to Crude	Stocks*	Year	Production	Tons	% to Crude	Stocks*
1920	86,395	75,297	38.4	.....	1925	132,930	137,105	35.6	13,203
1921	36,725	41,351	24.1	.....	1926	180,582	164,500	45.9	23,218
1922	57,834	54,458	19.3	.....	1927	189,144	178,471	47.6	24,980
1923	74,766	69,534	22.7	.....	1928	208,516	223,000	50.4	24,785
1924	80,079	76,072	22.4	.....	1929	218,954	226,588	48.4	27,464
1928:									
Jan.	14,862	20,140	58.5	21,941	July	17,278	19,070	51.0	17,305
Feb.	15,291	18,670	55.4	20,848	Aug.	19,049	17,890	41.7	15,881
Mar.	17,069	20,680	57.9	19,558	Sept.	18,693	17,795	44.6	17,991
Apr.	15,393	19,280	58.8	19,283	Oct.	17,182	18,420	45.1	17,026
May	18,945	20,215	54.1	18,137	Nov.	18,245	18,380	49.1	22,399
June	18,781	18,140	48.2	18,709	Dec.	17,728	14,320	45.9	24,785
1929:									
Jan.	18,685	21,068	49.1	24,394	July	18,387	20,236	48.7	19,679
Feb.	18,094	19,829	47.7	23,305	Aug.	19,787	18,230	47.6	22,309
Mar.	19,984	20,867	46.7	22,076	Sept.	18,660	17,071	49.2	24,984
Apr.	19,899	22,435	47.3	20,680	Oct.	18,865	18,744	53.8	25,117
May	20,385	23,176	47.1	19,479	Nov.	14,363	15,330	55.4	26,080
June	18,416	18,141	42.0	17,980	Dec.	13,429	11,531	49.0	27,464
1930:									
Jan.	15,010	17,454	47.6	24,241	July	12,322	12,384	42.3	23,873
Feb.	15,846	14,559	44.5	24,243	Aug.	12,047	10,985	35.9	22,980
Mar.	17,400	15,241	42.2	24,415	Sept.	11,433	10,480	41.4	21,996
Apr.	17,828	16,904	42.0	24,587	Oct.	12,349	10,724	39.3	21,145
May	17,812	17,052	42.7	23,356	Nov.	10,763	8,816	37.5	24,007
June	15,714	14,063	40.8	24,449	Dec.	.....	.....	.....	.....

*Stocks on hand at the end of month or year. Exports of reclaimed rubber, not shown in this table, amounted to 8,540 tons in 1927, 9,577 tons in 1928, and 12,369 tons in 1929.

(Rubber Manufacturers' Association figures raised to 100%)

REVIEW DESK

Books, New Publications, Catalogues, Etc.

INDUSTRIAL TRUCK TIRES. Published by the Bureau of Standards, United States Department of Commerce. 1930. 18 pp. $0.05.

On June 6, 1929, a general conference of representative manufacturers, distributors, and users of industrial truck tires drafted a simplified practice recommendation. The industry has since accepted this recommendation, which is reprinted in this report. Because of the rapid increase in the use of all types of industrial trucks, trailers and tractors during recent years and the lack of nationally recognized standards of wheel size and capacity, the number of sizes and varieties of tires used on this equipment has enormously increased. This establishment of a relatively small number of standard or "stock" sizes will not only benefit the manufacturers, but will also be of great assistance to all distributors and users of industrial truck tires.

TASCHENBUCH FUR GUMMITECHNIKER. By Dr. Werner Esch. Published by the author at Osterbeckstrasse, 43, Hamburg, 21, Germany. 1930. 108 pp.

A variety of important technical data for the rubber chemist and engineer is contained in this loose-leaf handbook. A first section is devoted mainly to important formulas for rubber mixes and is followed by various technical tables of interest and by a 20-page glossary of rubber chemicals and compounding ingredients.

RUBBER PRODUCING COMPANIES. Compiled by the Mincing Lane Tea and Rubber Share Brokers' Association. Published by the Financial Times, Ltd., 72 Coleman Street, E. C. 2, London, England. 1930. 685 pp. 7s 6d.

Data concerning some 600 rubber producing companies, including those with other plantation interests, are given in this 1930 edition of a work which has become a standard authority in its field. Following the same lines as previous editions, full results of the last six years are given, the figures in the case of the more important undertakings being set out in tabular form, permitting of rapid reference. There is a longer preface than usual, which gives a comprehensive survey of the industry's fortunes during the past year and deals with the outlook for 1931.

SOME MODERN ASPECTS OF RUBBER CULTIVATION. By Charles Herbert Wright. Published by Maclaren & Sons, Ltd., 27 Shoe Lane, E. C. 4, London, England. 1928. 162 pp. 6s.

A guide to up-to-date estate practice, this handbook covers soil factors and cover crops, drainage, tapping systems, manurial considerations, seed selection, bud grafting and other phases of rubber cultivation. It is profusely illustrated.

EMPLOYEE MAGAZINES. Published by the Policyholders Service Bureau, Metropolitan Life Insurance Company, 1 Madison Avenue, New York City. 1930. 24 pp. For free distribution.

As an instrument designed to reestablish the personal relationship between management and workers, so difficult to maintain with the tremendous growth in size and complexity of business organizations, the "internal" house organ or employe magazine has come into widespread use in recent years. The larger rubber manufacturing companies have all used this type of publication at one time or another. This booklet aims to bring together the results of the experience of successful house organ editors for the benefit of the organization seeking to improve an employe magazine already established and also for the organization contemplating the issuing of such a paper. The report is illustrated with reproductions of typical house organ covers, well-planned double pages, and the like.

THE PEOPLE OF THE UNITED STATES VERSUS THE CHAIN STORES. Published by the Home Defense League, Detroit, Mich. 1930. 107 pp.

This is an arraignment of chain store distribution by an organization "dedicated to community development, independence in business, equitable distribution of taxes and the securing of legislation to guarantee a return to the economic principles of government as instituted and perpetuated by Washington, Jefferson, Jackson, Lincoln and Roosevelt." It is of interest as one phase of the current agitation in some quarters against the chain store system.